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SESSIONAL PAPERS

VOLUME XXXIX.—PART VI.

Third Session of Eleventh Legislature

OF THE

PROVINCE OF ONTARIO

SESSION 1907

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No. 7. . Report relating to the Registration of Births, Marriages and Deaths during the year 1906. Presented to the Legislature, 30th January, 1907. *Printed.*

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No. 43. . Report upon the Hospitals and Charities of the Province, for the year ending 30th September, 1906. Presented to the Legislature, 12th February, 1907. *Printed.*

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No. 47. . Report upon the state of the Library. Presented to the Legislature, 2nd January, 1907. *Not printed.*

No. 48. . Report of the Hydro-Electric Power Commission of the Province, for the year 1906. Presented to the Legislature, 12th April 1907. *Printed.*

No. 49. . Report, with the evidence, of the Text-book Commission. Presented to the Legislature, 1st February, 1907. *Printed.*

No. 50. . Copies of Orders-in-Council, under section 27, of the Act respecting the Department of Education. Presented to the Legislature, 11th February, 1907. *Not printed.*

No. 51.. Return to an Order of the House of the sixteenth day of March, 1906, for a Return shewing the names of all License Inspectors appointed since the first day of February, 1905, together with their addresses and the dates of their appointment; the business or occupation of each Inspector prior to his appointment and the present occupation or business, other than their official business, of each such Inspector. Presented to the Legislature, 11th February, 1907. Mr. *McMillan*. *Not printed.*

No. 52.. Return to an Order of the House, of the thirtieth day of January 1907, for a Return giving the following information regarding the Toronto Electric Light Company, Limited. 1. Date of incorporation. 2. Applicants for Incorporation. 3. Objects of the Company. 4. Names of the Provisional Directors. 5. Amount of Capital. 6. Increase of Capital Stock. 7. Names of the Directors and Shareholders of the Company, according to the last Return to the Government. Presented to the Legislature, 11th February, 1907. Mr. *Hoyle*. *Not printed.*

No. 53.. Return to an Order of the House of the nineteenth day of February, 1907, for a Return of copies of all correspondence between the Government, or any member or official thereof, and any other person or persons, with reference to the dismissal of James Gillespie, of Picton, from the office of Sheriff of the County of Prince Edward. Presented to the Legislature, 26th February, 1907, Mr. *Currie*. *Not printed.*

No. 54.. Return to an Order of the House of the seventh day of February, 1907, for a Return shewing:—(1) List of names of Police Magistrates and Justices of the Peace in and for the County of Essex, on the 31st January, 1905. (2) List of names of Police Magistrates and Justices of the Peace in and for the County of Essex, appointed since February 1st, 1905. (3) Names of those who have qualified as Police Magistrates, or Justices of the Peace, in the County of Essex. Presented to the Legislature, 27th February, 1907. Mr. *Auld*. *Not printed.*

No. 55.. Return of all Fees received by the Master of Titles under Rule 77 of the Land Titles Act, for the year 1906. Presented to the Legislature, 5th March, 1907. *Not printed.*

No. 56.. Copies of Orders-in-Council commuting the Fees payable to His Honour Judge Finkle and increasing the commutations paid to His Honour Judge Benson, His Honour Judge McDonald, His Honour Judge Hardy and His Honour Judge Snider, under Section 187 of the Judicature Act and Subsection 2 of Section 84 of the Surrogate Courts Act. Presented to the Legislature, 5th March, 1907. *Not printed.*

No. 57.. Return to an Order of the House of the thirteenth day of February, 1907, for a Return shewing the various kinds of Patents issued to Locatees on St. Joseph Island. Presented to the Legislature, 5th March, 1907. Mr. *Smith (Sault Ste. Marie)*. *Not printed.*

No. 58. . Return to an Order of the House of the twenty-fifth day of February, 1907, for a Return shewing all Estates now unsettled upon which Succession Duty was claimed by the Treasury Department where the due date was on or before the first day of January, 1905, and the estimated amount of duty due and the reasons why unsettled. Presented to the Legislature, 7th March, 1907. Mr. *Kerr* *Not printed.*

No. 59. . Return to an Order of the House of the eighth day of March, 1907, for a Return shewing the amounts credited to the cities, towns, villages and organized townships in the Province of Ontario, from the sum received under Section 2, Subsection 5, of the Supplementary Revenue Act, 1899, as amended from time to time, and also the amount charged against each such city, town, village or organized township, respectively, for the maintenance of inmates of lunatic or other asylums in the Province under the provisions of Subsection 2, of Section 4, of Chapter 9 of the Statutes of 1906. Presented to the Legislature, 11th March, 1907. Mr. *Hislop.* *Not printed.*

No. 60 . Statement shewing cash expenditure on construction of the Temiskaming and Northern Ontario Railway, as of December 31st, 1906. Presented to the Legislature, 14th March, 1907. *Printed.*

No. 61. . Return to an Order of the House of the sixth day of March, 1907, for a Return of:—1. Copies of all correspondence between the Government, or any Member or Official thereof and any person or persons, relating to the cancellation or granting of a liquor license to the Palace Hotel, at Fort Frances. 2. Copies of all correspondence between the Government, or any Member or Official thereof and any person or persons, relating to the cancellation or granting of a liquor license to one Thomas Wilson, at Fort Frances 3. Copies of all correspondence between the Government, or any Member or Official thereof and any person or persons, relating to the resignation or dismissal of the License Inspector or any member of the Board of License Commissioners at Fort Frances. Presented to the Legislature, 20th March, 1907. Mr *McDougal.* *Not printed.*

No. 62. . Report of the Ontario Railway and Municipal Board upon certain Bills amending the Municipal Act *in re* the Conmee clauses, referred to the Board by the Standing Committee on Municipal Law, in the Session of 1906. Presented to the Legislature, 19th March, 1907. *Not printed.*

No. 63. . Report upon the Feeble-minded in Ontario. Presented to the Legisture, 15th April, 1907. *Printed.*

No. 64. . Return to an Order of the House of the eighth day of March, 1907. for a Return of copies of all correspondence and papers relating to or in the matter of the protest of Mr. Chisholm Livingstone and the Davis Estate, against the purchase price awarded them by the arbitrators for their property for the Queen Victoria Niagara Falls Park. Presented to the Legislature, 20th March, 1907. Mr. *Fraser.* *Not printed.*

No. 65. . Report upon the Horse Industry of Ontario, for the year 1906. Presented to the Legislature, 21st March, 1907. *Printed.*

No. 66. . Return to an Order of the House, of the first day of March, 1907, for a Return shewing the number of Mining Companies incorporated in the year 1906, also total amount paid into the Treasury Department from incorporation of Mining Companies in 1906, including licenses to companies previously incorporated. Presented to the Legislature, 21st March, 1907. Mr. *Pearce. Not printed.*

No. 67. . Return to an Order of the House, of the twenty-seventh day of February, 1906, for a Return shewing, according to Counties—1. How many persons held Commissions and were qualified as Justices of the Peace, within the Province, on the 7th day of February, 1905. 2. How many persons held Commissions on the 7th day of February, 1906. 3. How many persons were included in the General Commission of the Peace, issued by the present Government. 4. How many of the persons named in such General Commission were continued in office from previous Commissions. Presented to the Legislature, 21st March, 1907. Mr. *Ross. Not printed.*

No. 68. . Return to an Order of the House, of the seventh day of February, 1907, for a Return shewing:—1. The names of Counties which have adopted the "Alternative Method" of selecting Jurors under the Amendment of 1902 to the Jurors' Act. 2. For a Comparative Statement shewing the expenses incurred under the old and new system in said Counties from the years 1902 to 1906, both inclusive. 3. The Counties (if any) in which the "Alternative Method" has been repealed and have returned to the old system of selecting Jurors. Presented to the Legislature, 22nd March, 1907. Mr. *Hoyle. Not printed.*

No. 69. Return to an Order of the House, of the sixth day of March, 1907, for a Return of copies of all correspondence between the Government and the Northumberland-Durham Power Company, with respect to a lease of water power at Healey Falls. Presented to the Legislature, 3rd April, 1907. Mr. *Pense. Not printed.*

No. 70. . Return to an Order of the House, of the seventh day of February, 1907, for a Return, shewing the number and names of the settlers located in the Township of Gaudette and Hodgins in the District of Algoma, since the year 1906. Presented to the Legislature, 5th April, 1907. Mr. *Smith (Sault Ste. Marie). Not printed.*

No. 71. . Documents and correspondence regarding Petawawa Camp. Presented to the Legislature, 15th April, 1907. *Printed.*

No. 72. . Statement of distribution of Revised and Sessional Statutes. Presented to the Legislature, 17th April, 1907. *Not printed.*

No. 73. . Copy of a letter from His Honour A Constantineau, Judge of the Counties of Prescott and Russell, addressed to the Attorney-General of Ontario in the matter of the case Chatillon *vs.* Bertrand. Presented to the Legislature, 18th April, 1907. *Not printed.*

No. 74. . Return to an Order of the House of the twenty-second day of March, 1907, for a return of copies of all correspondence between the Nipissing Mines Company, or any Official thereof and the Government, or any Member thereof, relating to the property, or title thereto, of the said company, or any part or or parcel thereof situated in the Cobalt District; or to any application relating to the same; its title, or to the operation of the mines of the company, made by or on behalf of the company, or any of its Directors or Officers. Presented to the Legislature, 18th April, 1907. Mr. *McMillan, Not printed.*

SECOND ANNUAL REPORT

OF THE

POULTRY INSTITUTE

OF THE

PROVINCE OF ONTARIO

1906-7

(Published by the Ontario Department of Agriculture, Toronto.)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO
Printed and Published by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1907.

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TORONTO.

To the Honourable WILLIAM MORTIMER CLARK, K.C., *Lieutenant Governor of the Province of Ontario.*

MAY IT PLEASE YOUR HONOUR:

The undersigned begs to present herewith for the consideration of His Honor the Report of the Poultry Institute for 1906-7.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1907.

POULTRY INSTITUTE OF ONTARIO,

1906-7.

To the Hon. Nelson Monteith,

Minister of Agriculture for the Province of Ontario.

Sir,—I have the honor herewith to present the Report of the second annual meeting of the Poultry Institute, held at the Ontario Agricultural College, during the month of February. From beginning to end the meeting was a complete success. Poultry men came from all over the Province and remained until the closing session. We were also able to secure the attendance of prominent poultry men from the United States, who are engaged in this business, and they freely gave us the benefit of their experience.

We believe this Report will make valuable reading matter for the farmers of Ontario, and we recommend that it be published. All of which is respectfully submitted.

I have the honor to be, Sir,

Your obedient servant,

G. C. CREELMAN,
President.

Guelph, February 23, 1907.

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POULTRY INSTITUTE.

The second annual Poultry Institute of the Province of Ontario convened in the Agricultural College, Guelph, on Tuesday, February 5th, 1907, at 2 o'clock p.m.

Mr. L. H. Baldwin, of Toronto, was elected Chairman, and opened the proceedings with the following remarks: I felt very pleased to be the chairman of the first Poultry Institute of the Province, and I wish to thank you for placing me in the chair for another term. The success of a meeting of this kind depends on the amount of good, practical knowledge that you get out of the speakers. My experience leads me to believe that probably the very best work you will get out of the speakers is what you draw out of them yourself; so I cannot urge upon you too strongly to make close notes of any point that might suggest itself to you while the speaker is addressing you. Most speakers—in fact, all the speakers— will not object to your interrupting them or breaking in on their thread of conversation to answer questions; but if you feel diffident about doing it, make a note of it in a book, and when the speaker has finished, let us have the questions rapid and to the point.

SELECTING LAYING HENS.

By W. R. Graham, O.A.C., Guelph.

I regret to have to inform the meeting that Prof. G. M. Gowell, of Orono, Maine, who was to address you this afternoon, is unable to be present, owing to illness. The first item of Prof. Gowell's talk was "Selection of Laying Hens." We have not done as much work here on the selection of layers as has been done on the Maine Experiment Station. Probably no other Experimental Station has done as much work along the line of trap nesting as Maine has done. With our work there are two or three points which appear to be quite prominent and worthy of serious consideration. One of these is that each bird has its own individuality. By that I mean that there are certain birds which lay eggs that are nearly always hatchable. With one hen we found that she was a good layer, a hen that laid fertile eggs, but the eggs were not hatchable under hens or in incubators. One peculiarity of these eggs was that the chick would develop only to about the eighteenth day, or we always found a fully formed dead chick in the shell. We call that a fertile egg, but it is an unhatchable egg. We have also found other hens that will lay equally as many eggs that are nearly all hatchable under natural conditions, but they are not as hatchable under artificial conditions. There are a few hens, and I am sorry to state that they are in the minority, whose eggs are hatchable under almost any condition. In other words, these hens in the latter class seem to have so much vitality, and their eggs are so strongly fertilized, that they will stand abuse in the way of temperature and other conditions that are present in some methods of incubation, and yet will hatch a chicken that is fairly thrifty.

In selecting birds one has several objects in view. We all know the saying that "A hen that lays is the hen that pays." I do not think there are many people in the poultry business but who believe that the egg production is the best end of the business. It is probably the surest. You are not

taking as many risks as you are in the production of broilers, for instance; and if you increase the egg production of each individual hen five or ten eggs a year, you are doing a good business. I find it is a very difficult matter to get an accurate idea of the number of eggs that the average hen in the Province of Ontario produces in a year. I am very much inclined to believe that the average hen does not produce eighty eggs in twelve months. I believe the average hen on the average Experiment Station does not produce 110 eggs per year. One would naturally expect that upon the various Experiment Stations and Colleges which are scattered over the United States and Canada that they would get probably as good an average production as on the average poultry farm. They have many conditions present which are detrimental to the production of eggs, which are not present on the average farm, and they have other conditions that are probably more favorable. Considering all things, we should get somewhere near the average production on the Experiment Station.

I have come to the conclusion that the average production is somewhere about 100 eggs. In Maine they had a production of 120 eggs per hen on an average. They have been working on the trap nest system for a number of years, and, as far as I know, their record last year was 134 eggs per hen, which means that they had a gain of about fourteen eggs per hen over earlier records. I think that you can produce a wonderful improvement by selection in the first one or two years, and after that progress becomes slow. You must have a great many conditions favorable to make advancement. From what Prof. Gowell has told me, they have not used any males in their breeding pens that have not been produced from hens that produce less than 200 eggs per hen per year. All the hens in their breeding pens have been bred from hens that laid 160 eggs per year, so they might be termed strong producers. No hen is used for breeding purposes until after her egg record had been known for twelve months. In addition to all this, a great deal, undoubtedly, can be done by selecting from outward appearance. There are a great many methods advertised in various pamphlets and papers stating that if you will practise this or that method of selecting as laid down in the paper that you will be able to select the drones from the workers.

Q.—Would you advise a man to go by the Hogan system?

A.—The results so far have not been very satisfactory to me.

Q.—How has it acted with you?

A.—From what I can observe in the use of the Hogan system, you can go into the flock and pick out the hens that are laying at that time. We carefully examined 160 hens and pullets at the time we put them into the experimental pens; we took each pullet and examined her according to the Hogan system, and then wrote her rating in a book. For instance, No. 49, we would write opposite her number how well matured she was and what we rated her egg production would be.

Q.—That is according to the system?

A.—Yes. I went over these hens and pullets myself in the month of November, and also had my assistant, Mr. Terry, go over them. In comparing our estimates with the trap nest records, in some instances we were right and in some instances we were badly mistaken. I cannot say the system is a failure, because I know that you can go into a flock and by its use pick out the hens that are laying, but probably by keen observation a man could do the same thing. We wished to be able to select the good layers from among the pullets in October or November, but the system so far has not been a success for this purpose.

One year Prof. Gowell selected from a large number of pullets fifty which appeared to be more matured than their mates. They began to lay earlier than their mates. These pullets had probably grown faster and matured earlier. They were selected and put in a pen by themselves and kept there for their year's record. These made an average egg yield of 180 eggs per hen per year, while the average of the entire flock flock was about 134. This goes to show the correctness of the idea that has been advanced by many writers, that hens which mature early and have good constitutions are likely to be the best layers. I have also found in our work that pullets that begin to lay in November and December, or probably January, in nearly all instances make a higher egg yield for twelve months than those that begin to lay in March or April.

Q.—Does that apply to the second year, as well as the first?

A.—In our work it does. The first year the hen is expected to lay as many eggs as possible, and in the second year she may rest before the breeding season. That is to say, the hen is not given any encouragement to molt during the first twelve months she is laying. She is worked like a machine to get all the eggs out of her that are to be had during the twelve months, and at the end of twelve months, if she wants to moult and rest and get ready for laying by the time the natural season comes along, she can do so.

When we began to use trap nests in all of our pens I was surprised by the few hens that were really good layers. We found quite a large percentage of the hens that never laid an egg in six months. We used the trap nests from the first of March to the first of September. If the hens did not lay a reasonable number of eggs by September they were killed and sent to market.

Q.—Were they over fat old hens?

Mr. GRAHAM: We found that the hens that had an abnormal development of fat would, in eight cases out of ten, be the poor layers. I have been asking many people what is the relation between the size of the crop and the egg production. You know it is believed among cattle men, particularly breeders of dairy cattle, that a cow must have the capacity to consume food in order to give a large quantity of milk. I believe that a hen with a large crop has a much better chance of laying a large number of eggs than a hen with a small crop. I notice that our hens that lay the best nearly all have large crops.

Last summer, in going into a man's yard in Hartford who was making a specialty of breeding the 200-egg hen, I found that many of his best layers had large crops.

Q.—How can you tell a hen with a large crop?

A.—Go to them when they are on the perch at night and feel them. If any of you have ever tried to feed birds with a cramming machine you will understand that there are some chickens that have a crop which will hold approximately twice as much as others. You will find one chicken that will hold a pound of food if you will fill its crop full, and if it is able to digest that food, it is almost sure to make good gains. You will also find others that cannot take much at a time, and they do not do nearly so well. I believe there is something in that point in selecting of layers.

I understand that in the Sussex district, in England, the chickens are fed mush or soft food from the time they are hatched, in preference to dry food, with the idea that the chickens will have a larger capacity for food. They are better chickens for fattening than others, because the crop has been exercised in the way of producing a large barrel or a large capacity for food.

A very interesting point comes up in the selection of males. I noticed

last fall with the cockerels that were hatched from hens that were above the average layers that there was a marked individuality in regard to development. Some would be developed and mature when the others were quite immature. I have kept over two or three cockerels which developed or matured very early in life that are bred from good hens. I intended to breed them from a pen of mixed pullets and see whether their offspring will lay earlier than the offspring from a pen alongside which has cockerels which have developed in the ordinary way.

Q.—Do I understand that the individuality of those cockerels was at all uniform?

A.—It was uniform in some respects, but dissimilar in others. Particularly were they dissimilar in the development—that is to say, those cockerels that develop comb earliest in life are more of the Leghorn type. I have noticed that with some of the Leghorn breeders who are going in for egg production they select those that begin to grow early. I was amused by a little story Mr. Brown was telling about how the farmers in Norway selected their male birds. I understood that they would not breed from a male that was not a good crower, and that they had crowing competitions. The farmers would bring the cockerels, and they would have a crowing competition, and the male that would crow the fastest and the loudest would win the premium.

Q.—In a given time?

A.—Yes, and those fellows that would make the greatest noise are the chickens which develop the best and are the best chickens to breed from. Whether there is anything in it or not I do not know. I know that we have a few pens in which the males make a lot of noise, and we have others that are very modest and mum. Personally, I like the ones that are not so noisy. Of course, the final test, and the only true test, is by the trap nest. For the average farmer that would be out of consideration. They are rather expensive to make, and in the next place they require much attention. I can readily understand that there are a large number of people who could devote the time to trap nesting their hens. A man who is making a specialty of breeding for egg production or for fancy purposes has to use them, because the man who uses the trap nests knows each bird individually and its performances.

Q.—You do not know which hens the good ones come from the next year?

A.—When you are selecting birds you are never sure whether you are selecting the right one or the wrong one. It may not be good policy to say that he is going to select his poor ones, but at the same time I think the most of us are inclined to the idea that the best are none too good for ourselves; if the other fellow wants to take the poorest, he is welcome to them. I cannot conceive of any practical plan or idea in which advancement can be made with any degree of certainty without the use of the trap nest. The difference from the average standpoint of most persons is that it takes time. If you cannot use trap nests, the next best thing is to select the hens as best you can by outward appearances. I would say in regard to the egg product, "try early maturity."

I have had some experience with late hatched birds which began to lay early in life, and which did well. There is another interesting point, and that is that the hens that laid the best last year are the ones that are laying the best now. In fact, we have one hen that is six years old, and she has always been a good winter layer. She lays well in the winter time, but in the summer she does not lay as well. We have kept her because she always lays in the winter. We should have discarded her for her color and shape.

but we could depend upon her eggs in the winter time. A hen that is six years old and laid eighteen eggs in the month of January one feels very doubtful about discarding.

Q.—Do you know what her pullets are like?

A.—Part of them only. What we know are very good.

Q.—Are they as good as she is?

A.—Probably a little better.

Q.—Does Prof. Gowell select his pullets for the next year's laying simply from the laying records of the mothers, or from the shape of the pullets as well?

A.—I spent three or four days with him, and, as I understand, they breed only from those hens that have good performance as pullets. Yes, I think shape and color receive some consideration, but he does not take a hen, as I understand it, that lays small eggs or white eggs. They try to select the males which were of the best type and color constitutionally equally as good. I think that Maine Station raises a higher percentage of their chickens hatched than anybody else, and I am inclined to believe that their success in that line is due to two or three reasons. One is that they seldom breed a pullet; the next is that their birds, in order to make these high records, must be constitutionally strong.

They have only those in their breeding pens that are tried, that they know can stand hard work, and the result is that when they go to breed they have got this bred right in them, and they will stand this generation after generation. I believe that their birds are all quite a different type to the ordinary man's. They are probably not any larger, but they are more rugged. They have a wonderful development of constitution. I know that I have not yet seen a hen that is a large egg producer but had a good constitution.

Breeders should put in large letters a sign with "Vigor and Constitution" on it, and put it up where they could look at it all the time, then work towards that end.

Mr. Armstrong: Do you find chickens from that hen of five years old any stronger in individual vitality?

A.—I cannot answer you, because I do not know. Our experimental work in regard to individual vitality is only just now mapped out. We have mapped out at the present time a series of experiments in individual vitality to test the method of incubation and different methods of rearing. I would say that our observation in the use of three or four-year-old males has not been very favorable. The ordinary person believes that a male that is three or four years old will probably breed stronger chickens than a cockerel, but our tests have not been satisfactory for old males.

Q.—Your experience would be in favor of the earlier matured cockerels?

A.—Yes.

Q.—And pullets?

A.—No.

Q.—What breed is Prof. Gowell using for that purpose?

A.—Barred Rocks.

Q.—Do you notice any difference in the appearance of his flocks?

A.—I have not seen the entire flock. There is one thing in the selection of early matured birds that one has to be very careful about, and that is the quality and size of the bone. There is a tendency in these birds to lack size, and you have to discard those that develop too fine bones and lack of size.

Mr. Barber, Georgetown: Did those birds get too fat because they did not lay?

A.—Yes.

Mr. Barber: You have to be very careful in maturing your pullets to feed flesh-forming foods until they begin to lay, and then you can feed more fat-producing foods after they start to lay.

A.—I think probably you are right there, but I am inclined to the idea that a hen has to be in good condition before she lays. What I mean by this is that a laying hen wants meat; a fat hen may lay herself lean. I do not think a lean hen will lay. When you get them in good condition and they should lay, you have to feed the entire flock for egg production. The hen that does not lay, or ceases to lay, and then becomes fat, is the one you catch not doing business.

Q.—Do the heavy laying hens have any more comb than the others?

A.—I cannot see it. I know that the heaviest laying Barred Rock hen on the place has practically no comb at all.

Q.—Is not that so with the Minorcas?

A.—I have seen some laying birds that were not heavy in comb, and I have seen hens that have had no combs that were good layers. Mr. Brown says that if you want to have a good laying hen she must be heavier behind than in the front. I know some other men who believe in lengthening the body, one man in particular, who believes that a hen to lay a lot of eggs should be long in body shape.

Q.—I think the old type of Minorcas lays better than the new American type?

A.—The present fad of getting Minorcas of excessive size—long bodies and heavy weights—has not been of very much advantage from the egg-production standpoint. I know that there are many American breeders who would criticize this, but from the information I have got from breeders, and from what letters I have, I think the old type were better layers.

Q.—In selecting females to get prolific layers, would you depart from the standard of shape very much with White Wyandottes and Barred Rocks?

A.—No.

Q.—You think you get as good layers by following the shapes?

A.—It would take a longer time, but I think you could accomplish it. The man who is breeding with but one object in view will get to the top of the ladder much easier than the man with two objects in view, such as trying to get a hen that will lay a large number of eggs and a show hen as well.

Q.—That means that there is a possibility of getting prolific layers that are not the standard shape much more readily than if you get the standard shape?

A.—It would be possible to do so.

Q.—Does the over-fat hen tend to broodiness?

A.—I cannot say.

Q.—What time of the year does that old light hen start to get broody?

A.—She will lay about twenty eggs and then goes broody. A funny thing about that hen is that she cannot hatch chickens. She has spoiled three or four settings of eggs for me. I do not think I will give her another chance.

Q.—Do pullets go broody soon?

A.—Not particularly. I think there is a great deal to be done in the selection of the males.

Q.—It is the pullets that you speak of. You like the pullet with a good constitution, to start laying in December and lay well all winter. Are they the pullets you are to look to for your good constitutioned chickens, providing you are breeding from them?

A.—I do not know, but I would as soon take chances on those as the others, although there are people who have the opposite view. We hope to be able to tell you more when we get next season's results.

Q.—At present you think it is the constitution? If a pullet with a good constitution lays well all winter, should we look to her for good chickens?

A.—I would rather have her in the second year. I would give her a chance to build up. I think we should, if possible, use one set of hens for breeding purposes and one set of hens for laying purposes, but the practical side of that is the expense. Of course, if what results we are getting now are true, if it is true all the way round that the hens that lay this winter lays well next winter, how am I going to breed from her and not stop her egg production? If I breed from her and she lays well in December and January, I am in the same predicament with that hen as I was when she was a pullet. If I do not want her to lay, and stop egg production, I may be doing her more harm than good.

Q.—Has she not more constitution to stand the laying the second year than she had the first?

A.—We have one hen that during her first year laid a large number of eggs, and they nearly all hatched, and they are nearly all hatching again this year. I do not know how good they are, but we are getting chickens out of them, and got chickens out of them all last summer. She is one of those unfortunate hens that is not very good in type.

On the subject of the housing of layers, much may be said. The majority of us are inclined to cheap houses, what may be termed "fresh air houses." You can build a house expensively and ventilate it, and you can probably get an abundance of fresh air, but you would be throwing away your money unless you use artificial heat. If you were to ventilate the house freely you would feel that the temperature would go down unless you heat the air as it comes in, which would be expensive. My personal experience would be in favor of the cool house extra well ventilated that is dry and is free from draughts in the roosting compartments.

Q.—What do you call a cool house?

A.—I would not care if the temperature went down to 10 or 12 degrees below zero inside the house in very cold weather. I have found that some birds freeze much easier than others; for instance a bird that gets the least out of condition will freeze its comb when the thermometer drops. Take the chicken from the warm house and put it into a cool house and it will freeze, and the chicken that is in a damp house will freeze at 10 degrees above zero, while one that is used to a dry house will stand 30 to 40 degrees of frost. One cannot tell at what temperature a chicken will freeze. I have seen some Leghorns stand the winter better than some Plymouth Rocks, and some Plymouth Rocks stand it better than some Leghorns; it all depends upon the individual bird. A story that Prof. Gowell told me in connection with the Institute meeting was to the effect that a farmer at the Institute meeting had him go over to his place to see a house that was the opposite type—a warm house. He said the farmer was extremely careful that he should go in quickly. They both tumbled inside the door as quickly as possible. He had hens in there at about 2½ square feet per hen, and it was warm and damp, but they were laying well. They had a "washed out" appearance, but he was getting eggs, and the conundrum was, Why he did it? His conclusion was this, that the caretaker kept them boxed up in a fairly uniform temperature, and they knew no other condition. That the eggs were probably no use for hatching, and in the spring the hen would be no use, but it was a demonstration to show that the trick could be done in a warm, damp house. His

theory was this, that had the men been careless in shutting the doors in going in and out of the hen house he would not have succeeded as well.

It is not so very far back when we believed in warm houses, with two or three thicknesses of tar paper in the wall. Take, for example, the experiment that was conducted at Connecticut Experimental Station, where they took nine houses, representing the same breeds and the same type of house. In the one house they gave the hens warm water, in the next cold water, and in the last they gave them snow. The hens that drank the cold water laid the most eggs; and when there was snow the hens that eat the snow laid better, and when there was no snow their egg production fell off somewhat; the ones that took the warm water laid the least. It is not very long ago that we were told that we must not let the hens out in the snow. Now they come around and tell us to put snow into them. That is simply another illustration how we jump from one extreme to another. It will undoubtedly take more food where you give them snow. I have been interested in the experiment as to whether it takes more food to produce one dozen eggs in a warm house than in a cold house. The coldest temperature we had in a house is 7 degrees below zero. On the same day the warm house was 14 to 18 above zero; that would make a difference of about 20 degrees in temperature. We have not been able so far to find out as to whether it took more food to produce one dozen eggs in the cold house than in the warm house, because the hens have invariably laid more eggs in the cold house than in the warm house. You cannot get any ratio by which you can figure as to the cost. The hens do not lay the same number of eggs individually. Prof. Gowell has a heated house, and has been able to get more definite results. He is of the opinion that it takes more feed to produce a dozen eggs in a cold house, but not sufficient to pay for the coal. We find hens laying extremely well in very cold weather. I have correspondence from a man living back of North Bay, in what may be called a cold district, and there the hens have done very well, probably better than the average hen does. My idea of house construction is simply what was stated in the start. First, to get the dry house, in which there is no hen odor, and free, if possible, from drafts.

I want to draw your attention to two or three things in connection with the curtain-front house. Where the hens are running in large flocks one requires to be careful in opening the curtain screens. If you open one on one end of the pen and another on the opposite end, a draft is usually the result. You can put up two windows side by side at either end, but on a windy day do not put up one at the east and one at the went end at the same time. Where there is more than one curtain in a house, put them all up on a bright, sunshiny day, but on a cold day open one and let the others down; that is one of the points you have to watch very closely with the housing of hens. The straw loft has some advantages and some disadvantages, but so far as I have seen I do not know of any kind of ceiling that is equal to the straw loft. It keeps the house dry in winter and helps to cool it in the summer. We have two houses with prepared roofing on, and two with an ordinary "V"-shaped roof, with straw lofts. There is a difference of 10 degrees in the summer in favor of the straw loft houses.

Q.—What are the advantages of a straw roof?

A.—The advantages of the straw roof is that it keeps the house dry.

Q.—What are its disadvantages?

A.—Its disadvantages are that the straw needs renewing annually, and it collects the dust.

Q.—How often have you to renew it

A.—We have not renewed ours; you should renew it every season. The reason we have not renewed the straw in our houses is that we wished to know if the straw would become infested with vermin. You need to build the lofts high enough so that your head does not touch the straw and get the dust. I think you should build the house at least seven feet high at the eaves.

Q.—You might tell us about that long house?

A.—I regret to say that the long house has been somewhat of a disappointment to us, in that the stock is not what we wanted. When we came to fill the long house we did not have enough chickens to put in, and I bought twenty-five pullets which had been exposed to contagious diseases. This was unknown to me at the time, but I have found out since. When the birds came in they looked perfectly healthy, but after they were here two weeks I noticed some developing chickenpox, and we have had a battle royal with two pens for some time. There are some individual hens in the pens that laid probably eighteen eggs a month, but there are some that have not laid any eggs. They lay for a time and then they get a touch of a disease and stop. The large pen has not laid any more eggs than the small pen has. We have not as yet had these birds in prime condition. The working of the house has been very satisfactory. We were trying to test them in flocks from 60, 90, and 120. There has been no difficulty of overcrowding on the roosts. With this house one has to be careful of the manipulation of the windows, especially the long pen, which is forty-five feet long.

The feeding of the hens I do not believe is as difficult a problem as the housing and selection. The hen that is bred right will lay right if you give her the chance. The hen that is bred wrong and is fed well often will not lay. I bought twenty-five hens and pullets from a man who does not make a specialty of breeding them for egg production. These twenty-five birds have not laid a solitary egg from the 1st of October to to-day, and the hens running with them, of another strain, have been laying fairly well. They run along in the same pen and eat the same food. This indicates to me that there is something in breeding. I also noticed that in a good many pens the daughters of the egg-laying hens are doing well this year, so that I would ask you to pay more attention to the selecting and housing than the feeding. Of course, good birds poorly fed are not very good, but poor birds well fed are not very satisfactory. I might give you an illustration of the condition that is now present in one of the Eastern States. There are two men who have practically the same strain of hens; the one man raised his in flocks, and the other one raised his separately, and both are breeding from the same individual hens. The one man is getting an average egg yield of fifteen or twenty eggs per hen each month; the other man is getting none.

Q.—Were the eggs naturally hatched?

A.—Yes, and now they are both feeding about the same and housing about the same. As near as I can tell in looking at the flocks, I have come to the conclusion that the one man was not feeding enough; he was afraid to feed his hens too much; in addition to that, he is a nervous man, and the hens are afraid of him. When he goes into the pen the hens run all over. The other man is a good feeder, and will sit right down and talk to the hens, and the hens are laying well.

Q.—What was the breed?

A.—White Plymouth Rocks. I believe the difference is largely in the man. We can see a great difference in our short-course men. Some of them do lots of things that are all right, but occassionally one does things that are

all wrong. Some have the happy faculty of forgetting—forgetting to shut the doors and to feed the chickens beef scrap. These are little things, but they all count in the end. In the feeding of laying hens there are three things that you have to bear in mind—you have to feed them vegetables, meat, and grain. Layers need exercise in order to keep them healthy.

Q.—How do you exercise them?

A.—Just bury the straw in the wheat, or the wheat in the straw, which ever you like. I have seen eggs produced from all kinds of grain. One man naturally favors wheat, but probably another man favors corn. A great many dislike corn and say that it is a bad feed. Corn is undoubtedly good if fed properly. If you give a hen a chance she will balance her own ration, but in the feeding of meat we are meeting a very difficult problem. The price of beef scrap has gone up 25 cents a hundred in the last year, simply because of the demand, and as the demand increases you may expect Armour and Smith to increase the price of beef scrap. There does not seem to be any other food that takes its place. I prefer green cut bone when I can get it fresh cut to-day and feed it to-morrow. In the summer it is bad before you get it, and it is worse when you begin to cut it, and when you come to feed it you ought to bury it. In the winter time if you get it frozen hard it will be all right. I do not think there is any material that will produce eggs better than green cut bone. The next best thing is to use butchers' refuse, and when you get past that you come down to beef scrap, and the great advantage with beef scrap is that it is always convenient and always ready, and it saves time. Of course beef scrap is much more concentrated than is green cut bone. Now, if the manufacturers of beef scrap inform me correctly, we are buying beef scrap at $3 a hundred, just as cheap as we buy the beef heads at 10 cents apiece, weight for weight. It takes three pounds or more of meat to make a pound of beef scrap. I do not know if that is a fact or not, but that is what some of them have informed me.

Q.—What about skim milk?

A.—Skim milk is all right in the summer. In the winter a hen, in order to get sufficient nutriment, would have to drink a large quantity of it. You can get skim milk and put it into curds, and have excellent food. In a great many districts skim milk is out of the question. I do not know anything about the condition of condensed milk and milk albumem. The experience of most people who have used it has not been favorable. Probably some of you have used it with good results.

Mr. Graham: There are some Canadian butter-makers who are trying to make a powder from the buttermilk. There are two or three people working at it trying to produce a powdered buttermilk. You who like buttermilk to drink should get it. In connection with the vegetables, if we can get plenty of mangolds and clover hay we are pretty well fixed. I do not know of any station that has tested the value of mangolds and clover hay except Maine, and Prof. Gowell has told me that he can get as many eggs from hay as he can from mangolds. I do not understand that; they are not the same foods. I would like to see the two together myself. We encounter difficulty in getting clover hay. I have been trying to buy clover hay, and I cannot get it. When I find a farmer who has it he will not sell it.

Q.—Is it hard to feed mangels after they are frozen?

A.—They are then inclined to cause looseness of the bowels when we feed to young chickens.

Q.—How do you feed them in the cold house?

A.—Just put a mangel on a nail and let them eat it up.

Mr. KROUSE: They are frozen soon after you hang them up. At my place they freeze before the chickens get to them.

A.—Yes, they freeze sometimes, but those mangels you have are so big one would feed a cow.

Mr. KROUSE: I cut them in three pieces; they weigh forty-five pounds.

A MEMBER: I feed pulped mangels—just what they will pick at and eat in half an hour.

A MEMBER: Do you get good results from feeding alfalfa?

A.—Yes, especially alfalfa leaves. The experience of practical men has not been altogether favorable to alfalfa meal, owing largely to the manufacturers using in some instances poor hay. The New England men, in the vicinity of Long Island, are divided as to the value of alfalfa. Some of the duck growers, who use a large quantity of green food, have given it up entirely. They have gone back to the ocean to get the green food, and it works more satisfactory; but here I do not think we can get much better foods than alfalfa meal and mangels, and if we cannot get them we can grow them.

Q.—How does alfalfa compare with red clover?

A.—It is of a higher feeding value.

Q.—Is lucerne clover as good as alfalfa clover?

A.—It is the same plant.

Q.—Isn't it better if you take that alfalfa and cut it and then grind the whole thing up?

A.—Have you any idea what it costs to grind?

A MEMBER: Yes, but it is a good thing for the market.

A MEMBER: I have never seen the results of the chemical analysis of it, but would it be good feed?

A.—It would not be as good feed as the leaves alone. There is an action from the fibre that might be worse, but I understand in feeding animals you always have a certain amount of fibre present. The stomach gets a better chance to work on the foods when a certain amount of fibre is present. We have an alfalfa expert here, Mr. Elford, from St. Anne, who has grown alfalfa for years. He will tell us if he ever had any trouble with it from woodiness.

Mr. ELFORD: No, I like to feed it as it comes out of the barn, and I do not know of anything better to feed if it is well cured. I see where men are paying $22 a ton for clover hay, and using it for litter. They simply throw in a fork-full of clover hay from day to day, and the hens eat the leaves and the rest goes for litter.

A MEMBER: What is the right time to cut that alfalfa?

A.—When it is in good bloom.

Mr. ELFORD: When it is about one-third in bloom.

Q.—Would the clover hay be better if it was cut up?

Mr. GRAHAM: I do not think it would improve it much.

Mr. BALDWIN: I am sure we have all enjoyed very much Mr. Graham's remarks. I had one or two things to say to you, but I do not think I will take up your time now. Mr. Graham has put in my hand a letter from Mr. F. H. Pope, of Toronto, which I will read:

"DEAR SIR,—As the annual meeting of the Poultry Association again draws near, I thought my recent experience might be useful to the advocates of cold houses and dry feed. After studying the poultry bulletins issued by the Ottawa Experimental Farm and Guelph Agricultural College, and especially the first annual report of the Poultry Institute, I decided to keep poultry, and to keep them on the cold house, dry feed plan, as laid down by Mr. Hunter.

"Last August I built a house 12x13 feet, with shed roof 6 feet and 9 feet high, with the front facing south, made of glass, except the space for the door. The material used was rough lumber only, with tar paper battened on the outside and inside, and is so cold at times that a few nights ago my Leghorn rooster froze his wattles very badly.

"About the end of August I purchased from a gentleman ten Leghorns, one and two years old; from a farmer sixteen Barred Rocks, four months old, and from another farmer twenty-four Barred Rocks, three months old. The sixteen Barred Rocks turned out slightly crossed, but made good growth, and on the 9th December the birds started to lay.

"Their run was nine feet by forty feet, and they are never let out. My flock consisted of nine hens, one rooster, six cockerels, and thirty-four pullets. The feed was: Morning, cabbage leaves (now mangel wurzels), and a pail of dry bran and corn meal, three parts bran and one corn meal, dry, and also any scraps from the house, dry and cold, raw or cooked, just as they came. Dinner, two quarts of oats. Supper, three quarts of cracked corn wheat and barley, mixed. A hopper of beef scraps was always hanging in the house; also one of grit, oyster shell, and granulated bone. The water fountain is filled twice daily.

"When I killed the cockerels at Christmas they were as large as hen turkeys, and nice and plump.

"I clean the dropping board daily, and feed all the grain in the litter, on the sand floor.

"I have not had a sick bird, and my egg yield is as follows: December 9th, 1906, to February 1st, 1907, 896. My January egg yield for each day was as follows: 14, 16, 18, 14, 17, 19, 15, 23, 15, 20, 22, 20, 22, 19, 21, 21, 21, 18, 26, 22, 23, 26, 25, 24, 27, 22, 28, 22, 20. 24, 30.

"My reason for writing is to thank the Association for the assistance their literature gave me, and because no one seemed certain as to the success of dry feeding on a small city lot, where the birds are always confined. My neighbors, who feed hot mash, have not had half the eggs this winter that I have. I am an amateur, and do not profess to know much about poultry, but am good at details.

"Yours very sincerely,
"F. H. Pope."

Mr. Baldwin: I would just like to add one or two things. Mr. Graham has spoken of the fact that some birds would freeze more readily than others. I had an experience of that on my return home after being with you for a couple of days during the short course. The night I arrived home it was very cold, and it was late when I got there. I was not up to the farm that night, but when I went up the next morning it was something like 14 degrees below zero. There were two cockerels in a coop by themselves. One of these cockerels was quite badly frozen and the other was not touched. Now, that is just an example of what Mr. Graham was saying—that one bird in a healthy condition will resist the frost and will not show any frost-bites, whereas another bird that is not in a good condition will readily freeze. The other point is that Mr. Graham has had a great deal of experience with curtain-front hen houses. My house has only windows, and those windows fit loosely. I want to say that this winter I have had no frost in this house at all—I mean frost collected on the walls. There has been no dampness at all, and the straw has kept wonderfully dry and fresh. I have just a little bit of doubt as to whether those curtained windows do as good work as they are supposed to do. I had a little experience a few years ago with hens that laid well one year. Those birds laid exceptionally well. The next year I

bred almost entirely from those pullets, getting strong, vigorous offspring, and I bred from those the following year, and my record for eggs went down. This emphasizes this point, that pullets, especially when they are pullets, and they lay constantly all winter, perhaps to some extent sap their vitality or their ability to give vitality to their eggs to hatch that year. They are very much like an orchard. If an orchard over-bears one year, the next year nature re-asserts itself, and you have no heavy crop; so that there is the advantage that, while you push the pullets from year to year, you get all the eggs out of them, and the second year they make better breeding stock; but, if you breed from pullets continuously, because they are the egg layers, you are apt to lower the egg record of your flock. It seems to me to be a fact from the practical experience I have had.

EXPERIMENTAL WORK IN WEST VIRGINIA.

By W. A. Brown, Guelph.

I feel that I must offer some apology for taking up your valuable time this afternoon, but, since Mr. Graham has asked me to say something about my work at the West Virginia Experimental Station, I will do so.

About the 5th of May, last spring, I went down to Virginia, and I had a very pleasant trip on the way. When I arrived there I was very much taken with the country. It is certainly a beautiful spot. The Alleghany Mountains reach right down through the State. Morgantown, where I was going, lies about three miles from the foot of the mountains, so that the Experimental Station is located right among the hills. There is very little agricultural development in the northern portion of the State. The mineral resources form the main industry in that section. The hillsides are literally clothed with undergrowth, blackberry bushes, sumachs, and other low-growing shrubs. The rivers are few in number. Streams running through deep valleys flow down to them. I expected to see a lot of colored people there, but in the mountains of Virginia the negroes are very scarce. They seem to have no inclination for mining, glass-blowing, or metal-working.

The climate was very pleasant in the early part of the summer, but in August and September it grew very hot—too hot almost to work. In the winter, from what I heard from others, I do not think it would be so pleasant. It is neither far enough south to get perpetual summer, nor yet far enough north to get perpetual winter.

The Experimental Station farm is situated about a mile from the city of Morgantown, on the top of the flattest hill in the neighborhood, so far as I could see. There was an excellent view from the farm looking down towards the Monogehela River in one direction, and in the opposite direction looking towards the city. All around there were numerous mining villages.

Agriculture is not carried on to any great extent. It is chiefly confined to dairy cows, Angora goats, and chickens. To my mind, West Virginia is well adapted to the raising of chickens. There is an almost unlimited market. Although it has not developed among the people as yet, I believe that West Virginia will in time compare very favorably with the New England States, so far as the poultry industry is concerned.

As to the Experimental Station proper, they grow a very small quantity of grain. Corn, potatoes, and small crops of hay form their chief experi-

mental work, besides dairying and poultry. The poultry experiments at the Experimental Farm require the most bulletins. Here is a diagram of the poultry plant.

White Leghorns were the only breed of fowls kept on the plant. The main poultry house is constructed on the Maine State plan, with very slight variations. It has a slanting roof, covered with tar paper. The front, you will see, is much similar to the Maine State house. It is a curtain-front house, with a slanting roof, much similar to Mr. Graham's fourth experimental house. It is constructed of tongued and grooved lumber, double boarded on all partitions to give it strength; there are seven rooms in the house, with a feed room in the centre.

The house was built on a cement foundation, there was a gentle slope in one direction, and a tile drain placed below the foundation on the froot side gave excellent drainage. It gets very windy at times in that section, and it requires a house strongly built to stand the force of wind. All these experimental houses were staked down with heavy oak staves, to prevent the houses from being overturned.

Q.—How were they staked down?

A.—A stake in each corner.

Q.—Fastened with ropes?

A.—Nailed. Apparently stakes had been driven in and then pieces nailed on the corner of the house and stakes nailed to them. The main house had a cement floor. The ground had been levelled off, and about half an inch of cement flooring was used in each pen. It made it very easy in that way to turn over the litter.

Q.—Do we understand from that that he just levelled off the top earth and dumped down half an inch of cement?

A.—Yes.

Q.—Did he smooth it off with a trowel?

A.—Smoothed it off with a trowel.

Q.—Was it rough or smooth?

A.—Rough. There were about sixteen or twenty nests beneath the droppings board in each room. There was one feature about these nests which struck me very forcibly. The eggs were collected from the nests after driving the broody hens out, then a little door was closed, and the broody hens shut off from the nest for the night. In that way the professor thought that the lice were largely held in check. He believes that the broody hens furnish a most excellent place for lice.

D.—Did you get very many broody hens from those Leghorns?

A.—Seven or eight hundred.

Q.—How did you keep them in check?

A.—Beneath one of the dropping boards a pen was fenced off, and we shoved them in there.

Q.—Right on the ground?

A.—Yes. The perches would be about 4½ feet from the ground.

Q.—And beneath that you had your broody coop?

A.—Yes.

Q.—Were the hens inclined to lay under the nests, in the litter?

A.—In one pen we changed a flock of birds. There were about 100 in an old building, and they were moved into this room. In the first or second day's laying I would get from twenty to thirty eggs beneath the nests, and the litter was changed perhaps twice before the birds would lay in the right place.

Q.—Do I understand that you use the litter as freely in the summer as in the winter?

A.—Yes.

Q.—And you can make the hens work just the same?

A.—Yes, I tried to feed them in the barn-yard, but they got over-fat in a short time, and we had to make them work.

Q.—Was it a large, free range?

A.—Yes. There were about 500 of them in this house on free range.

Q.—Was there any difficulty of them not going to their right pens, or did they divide up pretty evenly?

A.—One pen was rather boycotted. I have counted about 100 in one pen and perhaps forty or fifty in another.

Q.—What would you do there then—leave them for the night?

A.—Yes. I omitted to mention that in the summer time there were summer roosts placed close to the wire netting in the front of each room, so that a large number of birds went there.

Mr. GRAHAM: What did that house cost?

A.—I cannot say; but lumber is not dear there.

Q.—How many acres of land had you in that run?

A.—A thirty-acre field extended back from the house: the land was not much good for agricultural purposes, not having been very heavily fertilized, but the birds wended their way down towards the pasture fields and into a large field of green food that was grown for dairy cows.

Mr. GRAHAM: I understand these buildings face the south?

A.—South-west.

Mr. GRAHAM: How hot is it in the summer time?

A.—The hottest days were from 90 to 100 in the shade. That was one difficulty that might have been remedied; the birds had little or no shade. There was this green crop back of the barn, in which they stayed much of the time. In the early morning it was not quite so hot, and then they scratched for the grain.

Mr. GRAHAM: Did you set eggs from these layers?

A.—Yes, the eggs laid were used largely to produce the chickens.

Mr. GRAHAM: Did you keep breeding stock in the colony house?

A.—No.

Q.—How did the fertility of the eggs from the hens on the free range compare with that of those confined?

A.—The eggs from those on the free range were a little better.

Q.—How would the fertility run?

A.—From 66 to perhaps a little better than 80 per cent. of all the eggs set. You might say that the average of all hatches last summer were 70 per cent. of all eggs set. It was remarkable the number of chickens taken from those incubators. In regard to the feeding of the birds, they were hopper-fed mash and beef scrap. There were central posts in each room to support the roof, and a hopper was nailed to each of these; a little platform stood out, so that the birds could jump up and eat from their hopper. They received mixed corn, wheat, and oats, equal parts by weight, in the morning and evening, in their litter, and had free access to beef scrap and mash in the hopper throughout the day. The mash was composed of equal parts of bran, oat chop, and corn meal. For a time we had some trouble. It was difficult to get corn meal that would work in the hopper. Little particles of corn would come down to the mouth of the hopper and the hens would pick that over. They got into the habit of scooping the meal out, and in that way a considerable was lost. The professor thought it would be well to change the

method of feeding for a while, so we stopped using the hopper and started feeding wet mash at night, with the same proportion of grain and the beef scrap as had been used before. The result was that the egg production fell for a time. Then it picked up till it was almost equal to what it had been before. We got some better meal and tried the hopper again. The result with the hopper feeding again was similar to the wet mash; the egg yield dropped with the change, and they never regained their uniform egg production again. This was due largely to the advancing season, for it was then drawing towards the latter part of August or the first of September. We concluded, however, that the hopper feeding was the most satisfactory; it was a great saving of labor, but the professor said that there had been a much heavier death rate than before, due to the concentrated form of the mash.

Q.—You had some experience with feeding rye?

A.—Yes, the only grain grown at the station was rye. It was fed once a day, with wheat and corn, and some of the pullets that were maturing rather too quickly were fed on rye alone.

Q.—Did your egg production go down with feeding rye?

A.—It did.

Q.—What was the size of the house?

A.—The house was 160 feet long, 14 feet wide, and the pens were 20 by 14 feet.

Q.—How many in each pen?

A.—It had been built for sixty birds to a pen.

Q.—How long were the roosts,

A.—The whole length of the house.

Q.—Single roosts?

A.—Two roosts. As regards lice, you would think that in that warm climate they would breed very fast. It is true they did, but they were held in check. We shut up all the broody hens, and every two weeks, or sometimes every ten days, the roosts were painted with ten of crude petroleum to one of the disinfectant. With repeated applications it was possible to keep the lice in check. In some of the new colony houses the lice did break out, but perhaps three applications of the preceding eradicated them.

Q.—Didn't that discolor the plumage of the birds?

A.—Yes, it did.

Q.—What kind of lice?

A.—Sparrow lice—bird lice. We got them under the perches in the day time.

There is one objection to the use of curtains in the Maine State house—the Leghorns will invariably roost on them. They would fly up there, and you would find perhaps a dozen sitting on the higher curtains in a room. This created considerable dirt on the curtains, and, to my mind, would soon destroy their usefulness. I do not think they would resume their original value for conducting fresh air. I may say that a new building was put up 180 feet long with pens 16 feet wide. It was built of oak lumber, two thicknesses on the back and two thicknesses on the ends. It has a pitch roof, but this roof is not satisfactory, as it is too hot. The heat of the sun comes through the tarred felt with great force, and in the hot weather the hens cannot scratch about noon time. In this house there is to be a commercial experiment. About 600 or 700 hens were placed in it, and all the eggs and the feed consumed are kept track of. The birds have a free range, and they are strong and vigorous and in prime condition.

Mr. Baldwin: Have you trouble with the males fighting?

A.—No. There were twenty males, perhaps, in the main house. Some were taken away and put back again. Then there was a high old time: but when they are together from the time they are cockerels they are all right.

In regard to the experiments. We had nine experiment houses, and from these is derived the experimental work for which the West Virginia Experimental Station is noted. Prof. Atwood has carried on experiments, and has written several bulletins on them. The houses are numbered 1, 2, 3, 4, 5, 6, 7, 8, 9. Two yards at the back of each house are each 100 feet long and 15 feet wide. The house itself is 10 feet by 20 feet, and twenty birds are kept therein. Rye was sown in one run in the fall, while the birds were in the other. When this had grown up in the spring they were turned on to it, and oats were sown in the bare run. After the rye was eaten off, the birds had the range of both runs.

Q.—Is it plowed up?

A.—Yes.

There were trees scattered through the runs, giving plenty of shade. We used a very ingenious cultivator, although the runs were only fifteen feet wide. It was a neat little arrangement, and did not weigh more than forty or fifty pounds at the most. The cultivator was light, but it would cut the soil up to the depth of 1½ inches to 2 inches.

Mr. Graham: Are the teeth like those we have on a spring tooth cultivator?

A.—Yes: about the same.

Mr. Baldwin: Did they stand out as wide as the whiffletree?

A.—Not as wide: perhaps it would take seven or eight turns up and down the yard to complete it.

Q.—Is it an American invention?

A.—Yes. It is the best thing I had ever seen for cultivating the soil. One can turn all the soil in the run much quicker than by spading, and it is not so clumsy as our ordinary garden cultivator.

Q.—Will it work clay soil?

A.—Yes. It has a sort of scooping arrangement. There were some very important experiments carried on at the station last year, a number of them being a comparison between the hopper feed and the old method of feeding. The first house was rather an experiment by itself, and the birds were fed once a month. Corn is much cheaper in that section, and this experiment was to see if the fattening tendency of corn could be overcome by a nitrogenous ration.

The birds had bran and the beef scrap before them continously, but the experiment did not result very satisfactorily. The fattening feature of the corn was not counteracted by the nitrogenous food fed from the hopper. There were twenty birds in each house, and they were weighed from time to time. The birds in the first house were fatter than those in the other houses. This experiment was carried on all year, and the birds laid better in the summer than in the winter.

Q.—As to feed, were they fatter in the summer than in the winter?

A.—I could not say about that; they gained up rapidly in fat. They were put in there in November as pullets, and fed from the hopper from the first. They rapidly gained in weight. The second house was also used for an experiment with hopper feeding. There was a hopper set in this house in which was a mash of equal parts by weight of oat-chop, bran, and corn meal, corn, and beef scrap. The hens had access to the grain part of the hopper at night only. The grain compartment was opened when the eggs were collected

at night, and shut in the morning when the birds were fed. The next house had a similar hopper, and in it was a mash of similar composition to the last pen, with the exception that they had a mixed ration of grain—corn, wheat, and oats—in equal proportion by weight. House four was fed by the old method. In this house was a closed feed-box, divided into two compartments, the one for mash and the other for grain. Quite a large amount was put in at one time—about sixty pounds of grain and eighty pounds of mash. The birds were fed the mixed grain in the morning and the mash at night.

Q.—What is the difference between a bin and a hopper?

A.—A bin was just a closed box, nailed to the wall. It was just a place to keep grain. It was found more satisfactory to take down a large quantity of perhaps sixty pounds and place it in a house than to keep track of the 1¾ pounds or so which the hens would eat at each meal. Much more accurate results were obtained in this way. House 9 was entered into the same experiment with houses 2, 3, and 4. It had a hopper with mash and beef scrap in it, and a bin of mixed grain. They were fed mixed grain night and morning, and had access to the mash and beef scrap at all times. In regard to the hopper feeding experiment, as compared to the old method, the birds in house 9, that had the mash before them all the time and mixed grain morning and night, gave the best results. No pullets died in that house, and their egg production was considerably greater than that of the other pens. This is the method we used to find out how much they would eat: The litter was eight or ten inches deep, and in the morning I would take a pint measure and scatter the grain in the litter. Perhaps once or twice a week I would go back in the afternoon and turn over that litter, and if I found there were any kernels of corn in it, I knew they were getting too much; if there was some wheat left, they were still getting too much; but if there were only a few grains of oats left, they were getting about right. I found that a little handful more or less of this grain would cause the egg yield to drop two or three. That was the way of determining whether they were getting the correct amount of feed, and the way of getting at it was by examining the litter for the amount of food left. This house gave better results than did house three, where they had mixed grain in the hopper. House 4, the one fed in the old way, laid well in the winter, but their total egg production was not equal to that of house 9. House 9 outdid them all in egg production. House 4, fed by the old method, gave better results than did house 3, which had the grain in the hopper. Houses 1, 2, 3 had the grain in the hopper, and none of them laid well in the winter.

Houses 5 and 6 were each a pen of two-year-old mongrels, secured from farmers in the neighborhood. It was an experiment to ascertain if the pure-bred fowl laid as well as the mongrels. The result was that both in their first year and in their second year the pure-bred fowl far outdid the mongrels; the mongrels got fat and would not lay. They were fed on the wet mash at night and the grain in the morning.

Mr. Graham: What is the sum and substance of your opinion for feeding White Leghorns?

A.—The method employed in house 9 with the mash and beef scrap in the hopper, and the mixed grain night and morning in the litter, gave the best results.

Q.—Was there any difference in the fertility of the eggs used in those houses.

A.—The house fed on the corn did not give as good fertility as the others, but of those fed with mixed grain, hopper fed or fed in the old way, little or no difference was noted.

Q.—Was there any preparation made for green food in winter?

A.—Yes, clover hay was substituted, but no mangolds were used; just a litter of clover hay.

Mr. Graham: Where did you get that hay?

A.—From the experimental plots.

Mr. Graham: How often did you change the litter in the house in the summer time? Once in two months?

A.—Once in a month and a half.

Mr. Graham: Did the experimental houses have cement floors?

A.—Yes; there had been rats previous to the putting in of floors, but they left soon after their holes were blocked up.

Mr. Graham: Where did they go to?

A.—I cannot say.

Q.—The rats did not bother the hopper at all?

A.—No; the hoppers were set right out on the cement floors. Snakes were the worst pests we had.

Q.—On a cold day, provided it was not stormy, did you open the windows to let the sun in?

A.—Yes; but if it was damp outside, raining and blowing in, the curtains were closed so as not to allow the litter to become wet. The wind gets a great sweep for perhaps ten miles, and when the rain was coming in, it would wet near half the house.

Q.—You built those houses and staked them to the ground, so that the wind would not upset them?

A.—The wind and thunder storms were the most difficult problems we had to contend with.

Q.—Were there many snakes?

A.—A large number. I used to carry a gun with me, but I did not succeed in shooting any.

Mr. Tebbs: In regard to snakes, since I built a poultry house I have had them burrowing up through the floor of the chicken house and coming up like rats.

Q.—That mash in the hopper was ground grain?

A.—It was equal parts by weight of corn meal, oat chop, and bran.

Q.—Did you mix the meal in among the scrap?

A.—No; the beef scrap was in a different compartment altogether.

D.—Did you hatch by the hen or the incubator?

A.—Wholly by the incubator; they dare not use hens. The snakes do not create any trouble, but there were plenty of two legged snakes, and we had to keep everything under lock and key.

Q.—What would you use as a substitute for bran? It is said that a great deal of bran is not pure; it is adulterated.

A.—We do not attempt to substitute anything.

Q.—Was the mash wet?

A.—No; not in the hopper feed houses. In several houses there was an experiment, some hens fed on wet mash and some fed on dry mash, and the birds fed on dry mash gave the best results.

Q.—Did any of your chicken houses have trap nests?

A.—No. House 9, however, would have made an exceptional record if they had been trap-nested. Eighteen was the highest day's yield in the spring, and in the summer it averaged from twelve to sixteen from twenty hens.

Q—What make of incubator did they use?

A.—Cyphers' machines were used, with temperature 102½ to 103 degrees.

Q.—Hanging thermometer or the temperature on the egg?

A.—Hanging thermometer.

Q.—Did you leave any of the doors open in the incubator?

A.—The doors were gradually opened during the process of incubation in the hot weather. We have had them open over an inch, and even then would secure an 80 per cent. hatch of all the eggs set. They came out of the shell all right, but we rarely raised over two-thirds of what was hatched. We had several large machines, three or four with a 360 egg capacity.

Q.—Did the chickens have the white diarrhoea?

A.—Yes, we had a few instances of it, but non-absorption of the yolk was more prevalent. We found chickens ten days to two weeks of age where the yolk had become a hardened mass. The blood vessels were quite apparent, and inflammation had set in in the organs in close proximity to the yolk. The greatest mortality among the chickens was due to inflammation of the lungs. Just what caused it we were not able to solve. The great proportion of the chickens that died were cut open and examined.

Q.—Was there any chickenpox?

A.—No, there was no such disease. The greatest cause of death among the hens was due to indigestion, brought about by the dry mash in the hopper feeding, and that in not very large proportions. There was not anything like the percentage of deaths that one might expect.

Q.—Was grit and oyster shells used?

A.—Yes. A hopper was made in the partition, about fifteen inches from the floor. There was just a piece cut out of the partition, and a flat board shoved right through. Higher up there was a door, and we would open up the door and dump in equal parts grit and oyster shell—dump them both in together into the hopper in the partition in the wall.

Q.—When you speak about opening the door of the incubator during the time the chickens are hatching, what temperature would the room be at that time?

A.—I cannot say; it was the summer time. It had been done previous to the first of May.

Mr Baldwin: How is the room heated?

A.—The incubator cellar was not heated at all. The furnace room was hot water heated, and it was divided by a board partition from the incubator cellar, but no special precaution was taken to heat the incubator cellar.

Mr. Baldwin: Were there any hot water pipes in the cellar room?

A.—No. The incubator cellar was situated about four feet below the surface of the ground. There were twelve windows in the cellar, and the only ventilation was by two opposite windows, and I might say that in all the time I was there I never noticed that peculiar incubator smell. There was no special precaution taken, except to open these windows; but even while they were closed during a thunder storm the incubator odor was never noticed.

Q.—Did you use coal oil or gas?

A.—Coal oil.

Q.—What precautions did they take when filling the lamps?

A.—They were filled in the same room. The lamps were removed from the incubator, and the coal oil can stood in one corner.

Mr. Baldwin: You could not notice any odor in that room?

A.—No. They ran seven or eight incubators. Above the cellar was the brooder house, with a capacity of seven to nine hundred chickens. They are kept there for two weeks, then are removed to the small colony house back from the buildings. As soon as another hatch would come off they would be put in

the brooder house, the older bunch having been removed to the colony houses. The best cockerels were separated and allowed to grow and mature by themselves, and the rest were killed and sold as broilers. The more mature pullets, after leaving the colony houses, were taken out on the free range. We built quite a few of those tent-shaped colony houses, with the wire window in the back and a screen door in the front. The larger pullets were placed in these, so as to prevent their laying too early. They were placed in the colony houses. There was a forty or fifty-acre pasture field on the side hill, and there they were left for the summer. They were fed only once a day, and subsisted on grasshoppers and bugs. In that way we secured some of the most hardy and most rugged pullets I think that I have ever seen. Their condition was well brought out in what Prof. Graham was saying in regard to pullets. They were lively and vigorous, they showed good constitution, and were the birds one might expect eggs from, whether they were trap-nested or not. The majority of the cockerels were sold alive. Down there the demand was so great for chickens that they would take them in most any form. Everything is shipped into that country from Kentucky, New York, and Ohio, so that poultry products in any form are easily sold.

Q.—What price?

A.—The broilers ranged from 30 to 40 cents a pound, but I think in the latter part of the summer they dropped to a quarter. The professor had sold some at 50 cents a pound, but they never reached the exorbitant prices which is received in the Boston markets.

Q.—Last summer in Montreal they were asking farmers to draw the chickens, and they were prosecuted if they did not.

Mr. Brown: This in a very meagre way, is a short description of the work carried on at West Virginia Experimental Station last summer. If there are any other questions you wish to ask about the hopper feeding, I am quite willing to answer them.

Q.—Do you use corn and bran exclusively?

A.—It was used in one particular experiment, but it was found that alone it was not very satisfactory.

I must say that I enjoyed my stay in Virginia very much, and, although I had rubbed up against some of the American people before, and had not received a very favorable impression of them, when I went down to Virginia I found them equally as hospitable and kind as they are in our own Province of Ontario. They seem to have some of that old Virginian spirit which was in the early pioneers of the State, and I enjoyed my stay with them very much.

Mr. Tebbs: I was at the convention last year, when I was a short-course student, and I decided that when I started to raise hens I would go by what Mr. Hunter suggested, and that was dry-hopper feeding; and all the chickens I raised—about 250—with incubators, have from the very moment of their being hatched received nothing but dry food. The way we adopted, first of all, was by feeding them freely in the brooder the chicken foods, such as Cypher's foods, and some that we got from Tillsonburg. The Tillson Company manufacture the chicken food. When they went out into the chicken houses the boys at home made hoppers, and we filled them about once a week. We tried different kinds of grain, but what we found most successful has been something like this: We got about 200 pounds of chopped oats, 100 pounds of cracked corn, and two bushels of wheat, and mixed them together on the floor and then fill up the hoppers. All through the winter we have been feeding that way. The doors have been open, and the chickens have had snow as drink. They have had no grain put into the straw at all. They

have plenty of straw, but, as one friend said to-day, he thought our chickens must be very well trained, because they eat the soft food and throw out the grain and wheat into the straw, and when they want a change they scratch for it in the straw. That is the only exercise they get; they go out into the snow. So far as I can estimate, the cost of feeding them so far for eighty birds is about 75 cents per annum.

Q.—How do you supply the meat?

A.—The meat is beef scrap, in a box in the house, with a hole drilled in one side of the box and hung on a nail, and that box is kept nailed, too.

Q.—What is your egg production for January?

A.—About 40 per cent. for this last January. The chickens that were hatched in April and May last began to lay in November, and the yield has been steadily increasing ever since. I find that the Wyandottes are doing the most laying. The Orpingtons had the lead, but now they have become broody, and the Wyandottes are keeping up the production. From about forty-five pullets we had about 607 eggs last month. We give them mangels as green food and also cabbages. We grew a late crop of cabbages that did not mature, and we give them to the chickens now. We receive from the butcher offal, such as lights, etc., and boil them and hang them up in the house. The chickens were afraid of them at first and they ran away, but now they have got used to them. The chickens have had no change in the dry-hopper feeding, and the other men in the town have adopted it since. We are giving them grit and oyster shell as well. We have yet to test the fertility of the eggs, but the birds are all vigorous. I had one Minorca cockerel. He had a small comb, and in the same pen I have some Old Country Minorcas with large combs, very vigorous birds. The Barred Rock cockerel was badly frosted, but there is not a trace on the other birds. In this system I cull from the beginning any chickens that are weakly, and kill them at once, so as to get real, healthy, vigorous chickens, and our death rate, apart from killing, has been low.

TRAP NESTING.

By George A. Robertson, St. Catharines.

I may say that I am running a fruit farm, and it is only in the winter that I pay special attention to poultry. However, I have been much pleased in the way the discussion has taken place to-day. I may say that last year I bred almost exclusively from three show hens. They had the show qualities; they were white, and they all lay large brown eggs. They varied a little in type; the one is a little short in feather, and the other was very heavily feathered and has a little larger comb than the other two; she has a big crop and never gets heavy behind. She laid, when I started in January with her as a pullet, from twenty to twenty-five eggs a month, until I stopped trap-nesting her. I trapped her again, and she laid from eighteen to twenty-two. She laid soon after she came back from the Guelph show a year ago. Last December she went into moult, and she stopped laying for about three weeks, and then she laid on pretty well. She got broody once or twice, but she laid on well to late in the summer. From that one hen we got twenty-one pullets and twenty cockerels, and all good, healthy birds. From another hen the fertility was not quite so good, but I set the eggs, of course, under a hen, and I noticed that if the hen was a little clumsy the chickens got tramped on, and it always was the other hen's chickens that

got tramped on. When I came to count up, although I had lots of chickens hatched, very few matured. In the fall I put them out on free range; however, I got some very good ones. The hen was heavy behind. That was one reason why they were not so strong in maturity, and I noticed the same fault with some of her pullets, that I was trying to test whether they were going to be good layers or not. I found that the space has been all filled up with fat, and I have had very few eggs from these well developed pullets. The other hen, very unfortunately, went off with some disease of the egg organs. Unfortunately, there are some pullets from these two hens that are not matured. They have been running out on range, and I brought them into the house, and fed them oats and meat scrap in the hoppers, and fed them wheat in the litter. I find the long-bodied ones are inclined to put on fat. I have best success from oats, but I have not anything to report in the laying, as the great bulk of them have not started yet. They are a most healthy lot, and they are gaining in size.

Q.—Have you any difficulty in getting them to go inside the trap nest at first?

A.—I have.

Q.—Can you count on any improvements in pullets in regard to trap nests?

A.—I may say that the hen I had so many chickens from this year I started the first of the year, and she laid nineteen eggs last month. They had good, strong germs in nine of the eggs. One I took and decided it was bad, and broke it open, and the chicken was still alive and kicking. They are due about to-morrow, and I am sorry I cannot report on the maturity of them. I am in for trying exhibition size of eggs, and I believe if you send out a mixed lot of eggs that you have dissatisfied customers. I want to have them show birds—good, vigorous birds; birds that will lay and hatch. I am not breeding for egg production as much as for fertility. I give them all the outside range I can, and I have not fed them mash for several years. I have had all sorts of experiences. I have a pen of mixed Wyandottes and Orpingtons. The Wyandottes laid up till the first of the year, and then went off and moulted, and they were running out in the snow with hardly a feather on them. The Orpingtons moulted earlier in the year. I have come to the same conclusion as some of these people who have had experimnts with hens, that the more you know the more you do not know. I expect to keep a record now. I did not keep the eggs separated, and I do not know the percentage as yet.

Mr. Baldwin: Can you suggest why those Wyandottes moulted this way and why the Orpingtons did not? People have difficulty with hens moulting in the winter time. I have not been bothered with it very much, but a curious thing happened. One hen in my flock moulted all by herself just about two weeks ago.

Mr. Robertson: You did not change from one pen to another?

Mr. Baldwin: They can mix if they want to, and go out when they wish to; I think something upset her. The only explanation I can give in regard to winter moulting is that it arises from your overcrowding your hens, and especially in mild weather, when they get overheated.

The physical condition of the bird might arise from the breed and the stock they come from, or the method in which they were raised might have something to do with their vigor; and birds of different vigors, although housed together, might show different inclinations to moult.

INCUBATION.

By C. A. Cyphers, Buffalo, N.Y.

In studying natural phenomena it is necessary to look for common principles. In the incubation of an egg the degree of humidity and the percentage of carbon dioxide have been taken as a common principle by other experimenters, but so far as I could ever see, the only principle common to all natural methods of incubation was the one of heat; that heat was the immediate stimulus that started the embryo to grow under incubation, and that it was the heat that kept it going throughout the hatch, and the one thing the egg could not supply for itself, or draw from the atmosphere.

I do not believe that we can take the domestic hen as the best example of incubation. She has been domesticated for so many years that some varieties have been educated away from the hatching of their own eggs, and under the forced methods which hens are kept it does not seem to me that the habits of the hen can be followed entirely as our best illustration of the correct methods of incubation. I have brought out larger hatches under certain conditions of artificial incubation than I usually secure with sitting hens.

There are conditions in which you cannot get a good hatch. There are eggs that will not successfully incubate. For instance, we can feed a duck a large proportion of turnips or other vegetables, and we will get a large, watery egg, and if we feed too much meat food we will produce the same thing. Eggs produced in Florida and throughout the southern belt will not hatch well at some seasons of the year on account of the birds eating large numbers of insects. This feeding for hatchable eggs is an element that will have to be taken into consideration when we study the phenomena of incubation. I think the public has been led astray in the use of incubators through assigning erroneous causes for poor hatches when they are secured.

There has been considerable discussion of how heat should be supplied. The hardest thing we have to do in artificial incubation is to treat all the eggs alike, and there is where a good many incubator manufacturers and a good many operators fall down, as they do not mix their eggs enough, they do not cool them enough, and do not balance up the heat with the cooling. The chick cannot be gotten out of the shell unless it is ripe. If it has absorbed its yolk food properly and is well ripened, it will come out ninety-nine times out of one hundred. If it has not absorbed the yolk, is not ripe, has not had enough heat units to ripen it, it will not hatch. It must have a given amount of heat in a given time in order to ripen.

It has not been determined what there is to the cooling of an egg that brings out a stronger chick, but I know if we do cool, it brings out a better and more vigorous chick, and one that we can make live with less work than a chick hatched from an egg that has not been cooled at all. Although a chick from an egg that has not been cooled may appear perfectly normal, we have to confine it longer and keep it warm longer, and in that way nurse it into a vigorous activity. I cannot say that such a chick will not make as good a bird as the one from the egg that has been cooled. It simply makes our brooding proposition a little harder when they do not cool. In 1895 I put up a large incubator at Stroudsburg, Pa. That machine was twenty feet square, and in the interior of it was another room with felt walls fifteen feet square. The temperature in the inner room was very accurately regulated. We admitted the fresh air and distributed the heat in such a manner that the temperature was kept within one-fourth of a degree.

Mr. Baldwin: Was that uniformity maintained both at the top and bottom?

A.—Yes, on any one level. As I remember it now, the difference between two levels was aproximately a degree to the foot.

The eggs hatched well in that room. While we were experimenting with that incubator, a local breeder brought us over thirteen Buff Rock eggs, and we hatched all of them. This was a 100 per cent. hatch of the eggs put in. The temperature at the top and bottom of those eggs, and at any portion of the surface, was practically the same. We operated that machine with an air temperature of 101 degrees to start with, and gradually reduced it to 98 degrees, the temperature of the thermometer resting on the egg remaining 101. In other words, the embryo had power enough to keep up the temperature within 3 degrees, and they came out in nice shape on the twentieth day. They were not cooled at all, excepting when they were taken out once in the ante-room to be tested.

The hatching of an ostrich egg in the Model incubator is just the opposite to this. A South African ostrich egg is five inches in diameter. The difference in temperature in the Model incubator between two levels is one degree to the inch. The difference of the air temperature between the top and bottom of the ostrich egg, which is five inches in diameter, is, therefore, five degrees. To successfully incubate that egg we hold the temperature on a level with the top of the egg at 98 degrees throughout the hatch, which takes from thirty-five to forty days from exclusion. Here we have a greater top heat than a bottom heat, and secure good hatches. These illustrations show the two extremes, both producing good chicks.

There is one interesting feature of hatching ostrich eggs. Inasmuch as the birds may develop into specimens worth $100 each, the operator is very careful in watching the eggs at the time of exclusion. If he finds a bird having difficulty getting out, the shell is carefully cracked until the umbilical cord is located, when this is tied and cut, after which the shell is removed without any danger of the bird bleeding to death.

I have recently received an authentic description of a Chinese hatchery and methods, located at Honolulu. This hatchery is built in an ordinary living room. In one corner is constructed a small heating closet, where the eggs are first placed. In the opposite corner is the incubating room, large enough to hold seventeen barrels, placed in two rows, with an aisle between them. It is in these barrels the eggs go from the heating room. Over the barrels are two tiers of shelves. On these shelves the eggs are finally placed to hatch. Replying to my enquiry regarding the temperature of the heating closet, my informant, Mr. Green, states that "the temperature of the heating room is that of the air of the whole room or closet, and not that of the eggs in the closet. No thermometer is used in any of his operations, nor any other device for measuring the temperature. So Yee Lee declares, and so I observed. He showed me his method of judging the temperature of an egg by placing the side of the egg against his ear and then against my ear. He also placed the egg against his closed eyelid. That, together with the "feel" of the room atmosphere, is, in my belief, his only gauge. With an ordinary wall thermometer I found the temperature of this room to be 92 degrees, and "Not yet warm enough," said Yee Lee. This heating room is a closet, built of tongued and grooved boards against the outer walls, seven feet high, six feet wide, and two feet deep. On the floor are five five-gallon coal oil cans, each with a side cut out, and filled with charcoal ashes, in the top-center of which is the live charcoal, burning slowly and feebly, in a space about three inches in diameter. Each of these cans rests within another old

can of same shape, but about two inches larger each way, around which is packed more charcoal ashes. This evidently is the only safeguard against fire by spilling live coals, as he quickens the fire in one can by scooping an iron spoonful of live coals from another can that is burning better, then adding fresh charcoal of about chestnut size. There was neither smoke nor fumes perceptible, nor ventilation for such, on any of my visits. Two feet above the floor is the first shelf for the eggs. This is simply two lengths of 2x3-inch joist. Above these are three more shelves, one foot apart, of same 2x3 joist, spread a foot apart. This closet is quite dark, as tight only as tongued and grooved boards will make it, there being no lining, no paint—simply rough board walls. Its door is not hinged, but lifted into place and fastened by two wooden "buttons" on each side. To press the door closer to casement at top he uses a slight strip of wood, bracing its one end against the opposite partition (which encloses the barred room), and its other against the top of door, relying on the bowed center of the strip for pressure to force top closer to casement. Each shelf holds four baskets, and each basket holds 225 eggs. The baskets are of split bamboo, coarse-woven strips of about half an inch in width.

The eggs are simply left in the baskets on shelves for twenty-four hours. They are then removed direct to the barrel room. Other heat is supplied in the barrel room. And here, through having an interpreter along, I learned of the second heating of the eggs, a process that the clipping did not touch upon, as I remember. After the first twenty-four hours' heating of the eggs, Yee Lee heats rice "paddy," which is rice with the hull on, in a large iron pan over a fire. To what temperature he could not say, except "Not too hot," and places a thin layer of it in a kind of cushion on the bottom of the barrel, then a square of cloth containing the first layer of eggs. Three alternate layers of "paddy" and eggs start the barrels. Above these three layers no paddy is used; simply the cloth and layers of eggs. This heated paddy is renewed morning and evening during a period of sixteen days, unless he finds the eggs too warm, when he skips the heated paddy at one turning. Without this heated paddy there would be no hatch, said Yee Lee. After sixteen days he drops the paddy, as the development of the duckling is advanced to a safe point; as he says, "It has hair on to help keep it warm after the fourteenth day." The eggs remain in the barrels fifteen days in warm weather, and eighteen or nineteen in rather cool weather. From this time on no other heat is applied to the barrel room; so says Yee Lee, and I saw nothing that would lead me to think otherwise. I asked if he ever moved the charcoal heaters into the barrel room in unusually cool weather. He replied emphatically, "No." If more warmth is required in a barrel he adds eggs from a warmer barrel; if less warmth is required, he diminishes the number in the barrel by guess, there being no gauge except his eyelids or his "earlids."

From the barrels the eggs are taken to the two overhead shelves, which are about two feet from the tight board ceiling, being placed on the topmost shelf first, which is the warmest, for three or four days, according to weather and season; thence down to the lower shelf, two feet under the top shelf, and not so warm, for the next and last three or four days. They are on the shelves for ten or eleven days.

The barrel-room faces south-west, which is the sheltered side in stormy weather; also taking the full afternoon sun on wall, and on roof all day. In the tongued and grooved ceiling are three hatchways two feet in diameter, which were partly closed when we went in, and after being about in and out for nearly two hours with barrel room doors wide open, at midday, he closed the door and opened wide the three hatchways, which let in the confined

warm air of the roof-heated attic space, which I had felt while registering the temperature of eggs on top shelf. This room has one door at end, and one window at opposite end, with the panes of glass whitened, and a slight packing of woollen between the two sashes and their casement, which looks out on to the street. This is all on the second floor of the building.

The temperature of the barrel room I found as follows: Of the room itself, with the thermometer resting on top of rice hulls surrounding the barrels, it registered 90 degrees at midday for the two hours I spent in and about the rooms.

In a barrel of eggs in their fourteenth day of incubation I placed the thermometer against the outer eggs of the third layer from the top, and it registered (after twenty minutes) 94 degrees. The same proceeding with a barrel of eggs in their eighteenth day of incubation showed 94 degrees.

The thermometer placed tube side down, resting on the eggs (21 days along), spread on top shelf, registered 94 degrees, each time giving the instrument about twenty minutes' time to express any variation. The result was the same with the eggs on lower shelves, which were twenty-four days along—94 degrees.

The insulation of the barrels is as follows: The barrels holding the eggs are placed alongside and touching each other in a bin three feet wide and of the same depth as the barrel. An ordinary export beer barrel is used, with the rice hulls filled in around all sides to within four inches of their tops. The inner lining of these barrels is about a quarter inch thickness of Manilla paper in original fold of about a quire, tacked down. Over the top of each barrel rests a shallow tray (of bamboo strips woven basketlike), which serves to rest each cloth of eggs as he brings them up out of barrel, while he stirs them, or "turns" them. Yee Lee says that no fresh air reaches the eggs except at the turning twice a day, or as he sees fit to leave the door open to the outer room atmosphere.

The temperature of the room during the last week is the same as at all times, for in this room are lots of eggs at many stages of incubation. Some have just been placed in barrels, some are pipping and hatching, while the lots are coming on at various stages of development. On one occasion I found the under shelf charged with 1,800 duck eggs, pipping and hatching like corn in a corn-popper, as seen in Connecticut winter evenings. These four overhead shelves hold 2,000 duck eggs each.

Yee Lee's method of letting fresh air into the room is by the door only, which opens into an outer room, the approach to which is within a foot of the door leading or opening on to the latticed outdoor verandah. In warm weather he keeps the door open while turning the eggs and closed in cool weather. He also adds a gunny sack to each barrel top under the bamboo tray that always rests on each barrel top. The turning process takes him one and one-half hours, there being seventeen barrels of eggs and one empty barrel to begin next turning with. Each barrel holds 1,750 eggs. He showed me the turning process. Reaching for one corner after another of the cotton cloth, made of sheeting, he lifts a layer out on to the bamboo tray on top of barrel on his left, drops the corners carefully, and as the eggs settle slowly he places his two hands among the eggs and stirs them rapidly twice; then, gathering the corners again, places the barrel on his right and proceeds down the line of barrels. When asked if he could hatch chicken eggs by the same process, he answered, "No can."

One point I want to call particular attention to regarding the Chinaman's method is that he has learned to balance up the heat with the cooling; and another point is that the eggs are warmer at the bottom, if anything,

than at the top, after the germs begin to throw off heat. With the hot paddy in the bottom of the barrels the eggs are warmer at the bottom than they are at the top, and by reversing their positions he evens up the heat, giving the eggs the approximate amount in the twenty-eight days.

Q.—What percentage of eggs does he hatch?

A.—I am trying to get that information now, but inasmuch as he buys his eggs from the Chinamen who are working on the rice plantations and sells the ducklings back at but twice the price he pays for the eggs, he certainly is hatching as well as they do on our large duck farms in this country.

My first experience with hatching eggs was with a double water-jacketed chemical bath, such as is used by chemists for drying purposes. We put a layer of cotton in the bottom of this receptable, on which we put the eggs, and covered them over with a heavy layer of cotton. The bath was kept heated by a spirit lamp and controlled by a very accurate regulating apparatus, and we got a very even temperature. The heat was applied to the eggs from bottom and sides, and I developed some of the best germs in that apparatus that I ever saw developed in an incubator. That experiment, coupled with the operation of the big incubator referred to at Stroudsburg, where there was no difference in the temperature between the top and the bottom, and the success we met with in hatching ostrich eggs where there is a wide difference, convinces me that there is no vital difference in the method of applying heat, so long as a certain number of heat units are applied to the egg uniformly over the required incubating period.

Mr. Graham: Did you ever try incubating eggs in water at the commencement?

A.—I never have.

Q.—Do you suppose there would be any advantage? Would you get a more uniform temperature? Would that be any advantage—an absolute, uniform temperature at the commencement of incubation?

A.—Such a temperature would be an advantage, but it would be nearly as difficult to spread the water so as to embrace a large number of eggs as it would be to spread air, if not a little more so. I presume it could be done, but I do not see any advantage in it. Air is the easiest managed of any heating medium we have, and while it has the disadvantage of not carrying very much latent heat, it seems to me easier to control than it would be to heat a large number of eggs with a circulation of water.

Mr. Graham: I saw in one experimental room where they were trying to start germs to hatch in water. How long do you think they could be left in the water without injury?

A.—In my judgment they could not be left in very long. An egg, when it begins to incubate, breathes the same as a fish does in water. It absorbs the oxygen first from the albumen, then from the amniotic fluid, and then from the allantoic fluid, which, in turn, is supplied by absorbing the oxygen from the air. While there is air in cold water, heating the water drives the air out. While the developing embryo does not need a large amount of oxygen, it needs a constant supply, as if we varnish the egg over so as to exclude the air, the germ dies in the course of two to three days, and the development in that time will be found upon examination to have been slow.

Mr. Tebbs: I know a man who put eggs in water glass and afterwards put them in an incubator. I laughed at the idea, and he said he tried it for fun, and they started to germinate.

Mr. Cyphers: That is not impossible. If you varnish over an egg and put it in an incubator the germ will develop for a few hours, and there will sometimes be enough air in the egg to carry on the development up to the

point where the heart will beat before it will die. An egg can be placed under drying conditions so as to dry the membrane, and the same effect will be produced. For instance, I have put an egg in an incubating chamber in the path from a current of air produced by an electric fan, and the germ development was slow, and the germs eventually died. A frog, which breathes through its skin, can be kept in a dry room for several days without inconvenience. Hold him in the path of an air current from a fan, and as the skin dries he will make desperate struggles to get away; yet a frog needs so little air that it can be frozen solid in a cake of ice and will live there for weeks.

Mr. BALDWIN: They are found in rocks.

Mr. CYPHERS: I think those are toads. A frog breathes through its skin entirely, and if the skin dries it cannot breathe.

In supplying moisture in artificial incubation my observations have led me to believe that the effect of supplied moisture has more to do with the evening up of the temperature in helping to apply heat to the egg than that the supplied moisture prevents the drying of the membranes; that the drying of the membrane is due more to a rapid movement of the air in the incubating chamber than the lack of humidity. The incubating chamber that will produce the best results is one in which the circulation of air is slow but positive. It is the positive movement of the air that evens up the temperature. If it has no circulation of air, the temperature will be found very uneven. If in such a still atmosphere additional moisture is injected, the inequality of the temperature will largely disappear. To some extent the heat will bank up in the middle of the chamber, but the higher the degree of humidity the less variation in temperature there will be. In designing the Model Incubator a very moderate but constant circulation of air is secured. It was my conception that if a constant circulation was secured, the air not moving too fast, but just moving enough to even up the temperature, that condition would be produced which would hatch eggs and hatch them perfectly. This has worked out in practice. The air in the Model incubator does not move quite five feet a minute.

Mr. BALDWIN: Do you believe in banking carbon dioxide in the bottom of the machine?

My CYPHERS: Up to a certain point carbon dioxide has no injurious effect, as far as I have been able to see. I went over that matter in 1888 or 1889, making quite a number of experiments. We had found quite a high percentage of carbon dioxide under the hen, and we put sweetened new vinegar in the incubator, and other substances to bring up the carbon dioxide content in the air, without any apparent effect.

Q.– It did not affect the hatch?

A.—No.

Q.—Did you have supplied moisture or dry air?

A.—It was a hot water incubator, and it rather moist. The ventilation was through side and bottom felts.

Mr. GRAHAM: Have you any idea what the humidity was inside of the machine?

A.—In our moisture experiments we kept the incubating chamber at 50 degrees. I don't recall whether we used supplied moisture with the carbon dioxide experiments.

Mr. BALDWIN: How did you maintain 50 degrees humidity in your experiments?

A.—We had a felt bottom machine, on the bottom of which was placed a number of sponges. When we found those and the bottom felt getting

too dry we had a spraying apparatus arranged by which we could moisten the sponges and felts without opening the machine.

Mr. DAY: How did you read the humidity—with a wet and dry bulb?

A.—Yes.

Q.—Without fanning?

A.—Yes, always. In our experiments we found that the more movement we have in the air the greater the evaporation, and the harder it was to maintain the humidity, and for that reason we always avoided the circulation of the air.

Mr. BALDWIN: What was the result of the test in that incubator in the percentage of what was hatched as far as the vigor of the chicks is concerned?

A.—If we cooled the eggs there was little difference.

Mr. BALDWIN: Did you have any trouble with white diarrhoea with those chicks?

A.—White diarrhoea usually comes when you chill your birds.

Q.—Have you seen chicks with white diarrhoea inside the incubator before they were taken out?

A.—I have seen it in baby chicks hatched during the hot weather in a machine that was not properly ventilated. I have seen this condition prevail to the extent of causing blood poisoning, the back of the head having rotted away, although the chick was still alive.

Where the eggs are properly cooled there is little trouble on this score, even where the machine is not adequately ventilated. Cooling the eggs will benefit the hatch in any incubator. While a rule often needs to be modified on account of the different temperaments of the operators, I advise as a general practice the following method of cooling:

Average room temperature.	Operating temperature.	Time to cool.	
		3rd to 7th day.	8th day to pipping time.
30 to 40 degrees	103	5 minutes.	10 minutes.
40 to 50 "	103	10 "	15 "
50 to 60 "	102½	15 "	20 "
60 to 70 "	102½	20 "	25 "
Hot days	102	20 "	30 to 50 minutes.

We run with the suspended thermometer with the bulb on the higher level of the eggs. This is working by the air temperature, which is slightly lower until the animal heat develops.

Mr. DAY: Would you say the immediate effect of cooling was due to the cooling, or to the extra supply of fresh air?

A.—I presume that the fresh air has a great deal to do with it, yet cooling seems to have a hardening effect. It gives a stronger vital force. It is along the same line as the practice of growing winter cabbages, which I found my friend Mr. McEvoy doing at Oil City, Pa. Mr. McEvoy is an old truckman, as well as one of the best duck men in the States, and he grows the earliest cabbages of anybody in his neighborhood. The little plants are put under cold sash in the fall, where they freeze up hard and remain in this state all winter. As the spring breaks the sash are opened more and more until the frost goes out of the ground. Earlier than any one else would dare to, the little plants are transplanted to the fields, and

though the frost may come and freeze all other vegetation, it will never freeze these little cabbage plants. He practices the same thing with his little ducks, letting them out on the ground in the snow after they are two or three days old, and probably loses a smaller percentage than any man in the business. I have seen his little ducklings three days old running out in the pens where the temperature was 12 below freezing. My experience with cooling eggs is that the more we cool and still get the birds out on time the stronger chicks we get.

A MEMBER: Would not the introduction of fresh air from outside answer the same purpose?

A.—I presume it would to some extent, but as quick as we get a strong movement of fresh air in the machine we begin to get other elements to contend with. The difficulty in hatching the eggs artificially is to hatch a large number together.

Mr. GRAHAM: I would like to know in case of where you want to use some moisture in your machine how would you apply it?

A.—You could either use pans or sponges. Shallow pans containing wet sand or sawdust could be placed under the trays on strips, or wet sponges can be thrown in on the burlap of the nursery tray.

Q.—If you close up the bottom of the Model incubator you will get an uneven heat?

A.—You won't get any at all. All the heat comes in with the incoming air, and if there is no outlet no heat will come in.

Mr. BALDWIN: The only outlet in the Model is in the floor?

A.—That is all.

Mr. GRAHAM: If we made the sand tray large enough so that there would be 2 inches space around the side, would that be sufficient to give it enough ventilation?

A.—If the sand tray was suspended slightly from the nursery tray by a couple of cross strips, a 2 inch space all round the sand tray would be sufficient.

Mr. BALDWIN: What temperature do you start your machine at?

A.—We start at 103 degrees sometimes 102½ in warm weather.

Mr. BALDWIN: With the suspended thermometer?

A.—Yes. The point is that we have to give the eggs a certain amount of heat within a given time to bring the chicks out, and if we start low we wind up a little high.

Mr. BALDWIN: You heat according to the heat in the incubator room?

A.—Yes.

Q.—If the incubator room goes down to 40 degrees what would you start the incubator at?

A.—At 103 degrees.

Q.—If the room was at 60 degrees what would you start at?

A.—102½ degrees.

Q.—What would be the variation between the suspended thermometer and a thermometer placed on top of the eggs?

A.—It would be a trifle higher, and as much as a degree and a half to two degrees higher than the thermometer laid on the tray.

Mr. GRAHAM: That would be taking your temperature with a contact thermometer, 101½ degrees.

A.—With a contact thermometer we keep the temperature at 102 degrees throughout the hatch. This makes the egg temperature a little higher at the start, and a little lower at the finish.

Q.—Do you lower the temperature of the suspended thermometer as the hatch proceeds?

A.—No.

Q.—If you start your machine at 102 degrees and you keep it at 102 all through, won't the eggs be at 105 degrees at the end of the hatch?

A.—No, because we have a thermometer on a fertile egg.

Q.—Your machine comes with a suspended thermometer?

A.—The hen-egg machines do. The No. 4 Special Duck has a contact thermometer.

Q.—How do you regulate the amount of cooling?

A.—By cooling the incubator.

Q.—You open the incubator door?

A.—Yes, we leave the door open.

Q.—For how long?

A.—It depends on the outside temperature, according to the table I have given you.

Q.—Do you ever operate your machine with the door slightly open?

A.—Only on a very hot day, when we have a large number of fertile eggs in the machine and cannot keep the heat down otherwise.

Q.—What is the best temperature in the incubator room?

A.—Between 60 and 70 degrees.

Q.—Aside from the question of cost, wouldn't it in your opinion improve the method of incubation to introduce fresh air by the indirect method?

A.—That is the way the Model incubator is heated. All the air that passes into the machine gains its maximum warmth before passing into the incubating chamber.

Q.—Do you think the smell of lamp fumes in a cellar is any detriment?

A.—I do. It is the impurities thrown off that smell.

Q.—How would you go to work to build an ideal incubating room?

A.—I haven't any ideal for an incubating cellar. The large incubating room we now have nearly finished at the Model Farm will hold 142 No. 3 incubators. It is 47 feet wide and 130 feet long. It has a 6 foot tile wall and a 4 foot frame above that. There is a 6 light 10 x 12 window space every 9 feet 6 inches around the two sides, and we ventilate the room by those windows.

Mr. GRAHAM: There is no special means of bringing the fresh aid down to the floor level?

A.—None at all. The air coming in is colder, and drops to the floor, while the hot air is flowing out at the top. I find that that way of ventilating the cellar or incubating room is the best.

Mr. BALDWIN: Is the cellar above the ground at all?

A.—Part of it is in the ground 6 feet, and the balance of it is banked up to the height of the 6 foot tile wall. Above the ground is a 4 foot frame wall.

Q.—Do you use any artificial heat in the incubator room in the winter time?

A.—We like to heat the cellar up to 60 to 65 degrees before we start the incubators.

Q.—Will a draught coming from those windows strike the machines so as to affect them at all?

A.—No: we do not open the windows very much. It is not necessary. If the wind is on one side, we open the windows on the other. We open just enough to keep the air smelling sweet.

Q.—Do you use any special brand of kerosene?

A.—No, but I wish they did in some parts of the country.

A MEMBER: The difficulty we encounter is to get good kerosene.

MR. CYPHERS: In our district we get Pennsylvania oil which is the best in the country, but when we get the Kansas oil we have difficulty, and operators experience difficulty with the oil in various sections of the South. There is a great deal of sulphur in the Ohio oil, and much of the Western and Southern oils, and some of it is so heavy and poorly refined that even burning it with a glass chimney for two or three hours will smudge up the chimney. Such oils char the lamp wicks badly and give more or less trouble.

Would the weight of the oil by the gallon be any test of its purity?

A.—I am not familiar with the methods of testing oil, other than the test of using it.

MR. BALDWIN: Don't they test it by flash-light?

A MEMBER: By the flash point on what degree of temperature it will burn.

MR. NIX: It is my impression that specific gravity has something to do with the quality.

MR. GRAHAM: Then the whiter the oil is the better?

MR. NIX: Not necessarily. You may have impurities that you cannot see with the naked eye. Pure lamp oil will not char the wick. For Spratt's Astral Oil we pay 50 cents a gallon at the factory at 150 degrees flashing point. The flashing point means that at 150 degrees the oil will explode. Other oils will explode at 100 degrees, so the higher the flashing point the heavier the oil will be.

MR. GRAHAM: What about the asbestos wicks? Are they any good?

MR. CYPHERS: If the oil is pure you can use an asbestos wick for about a week. Then the pores fill up, and it does not draw up the oil.

Q.—Do you know whether acetylene gas is used for heating incubators?

A MEMBER: Does not Mr. Snyder use acetylene gas? I used gas entirely before I went to Niagara Falls. Mr. Snyder had one of those gas engines put in.

MR. GRAHAM: What is the cost to heat the machine?

A MEMBER: The machine costs $150 put up right. I didn't go into it minutely. The cost of the gas is about equal to 150 flash-point American oil at 27 cents a gallon; that is, acetylene gas to heat with would cost at the same rate as American oil at 27 cents a gallon.

MR. GRAHAM: How would alcohol do?

MR. CYPHERS: It is too expensive, as it has low heating qualities.

A MEMBER: Would natural gas do for a machine?

A.—One of my customers runs ninety of the large Model incubators with natural gas. Natural gas has stronger heating qualities than city gas. It has more heat units.

MR. GRAHAM: What about the big incubators? Are we going to get one that will run satisfactorily?

A.—We have one in the experimental room now that holds about 2,000 eggs, but I am not entirely satisfied with it yet. It will probably be built in units of 1,000 and 2,000 eggs.

MR. GRAHAM: Will the distribution of the heat, etc., bother more if you increase the size of the machine?

A.—Yes, but I presume I could treat 5,000 eggs at one time in this machine, but there are very few plants that would want to set 5,000 eggs at one time.

MR. GRAHAM: Is a small machine easier to heat evenly than a large one?

A.—Within certain limits there is no difference. The No. 3 incubators of the Model type, that hold 360 eggs, heat just as evenly as the eighty-egg machine.

Q.—Our experiments show that we can hatch with a 200-egg incubator with as little kerosene as with a 100-egg incubator. Is that usual in practice?

A.—Yes there is only a slightly greater wall area in the larger machine.

Q.—Will the oblong machine heat more readily than the square type?

A.—I haven't been able to heat the long machine as evenly as the square machine.

Q.—How do you pipe for gas?

A.—We simply bring the gas through an iron pipe to beneath the heater and use an Argand burner and a mica chimney. We can supply those burners if a person desires them. We sell them at $1.50 complete, including the pet cock, burner, and chimney.

A MEMBER: With natural gas would there not be some objection from injurious fumes?

A.—With the incubator cellar well ventilated there is no difficulty on that score.

Q.—There is just as much difference between natural gas as there is between two coal oils?

A.—Yes. Natural gas will run all the way from 250 to 1,000 British thermal units.

Q.—Have you any explanation to make in regard to chickens dying in the shell? They get pretty well along and then die.

A.—It is a question of germ strength and attention to balancing up the heat with the cooling.

Mr. BALDWIN: It seems to me your mode of cooling is rather the minimum than above the average.

A.—I hardly think so. It runs all the way from five minutes from the third to seventh day in cold weather to forty to fifty minutes at the last of the hatch in warm weather.

Mr. TEBBS: In regard to circulation, it would be an important factor to have the burlap on the nursery tray renewed occasionally?

A.—Between hatches we brush and clean it very thoroughly. We renew it only when it is worn out.

Q.—Some machines are improved by putting the burlap all over the bottom. How does your machine work that way?

A.—It will work well in warm weather.

Mr. ROBERTSON: If you kept up the heat you would get a good hatch that way in cold weather, would you not?

A.—It would be necessary to pour the hot air through the machine too rapidly for the best results.

Mr. ROBERTSON: I would like to know the different causes that make the chicks stick in the shell.

A.—It is a matter of balancing up the heat with the cooling so as to ripen the chick.

Mr. GRAHAM: I was going through the colony house district of Rhode Island and saw a man taking off seventy clucky hens with 700 chickens. That seemed to be pretty good.

Mr. CYPHERS: How many eggs did they put under?

Mr. GRAHAM: They said they put in thirteen, which would make their hatch 77 per cent. of the eggs set. I never saw any anaemic chickens among those chickens that grow all feathers and hardly any bodies and long heads.

Mr. CYPHERS: You find such chickens in brooders when the operator has kept them confined too long.

Mr. GRAHAM: It is a question of getting them out in the fresh air quick enough?

Mr. CYPHERS: More that than anything else.

Mr. DAY: Did I understand you to say that was an average hatch?

Mr. GRAHAM: That is what I saw—seventy hens with 700 chickens.

Mr. CYPHERS: You have to take into consideration in that district they are all colony hens, hopper-fed, which means that they are all well fed. The buildings are not tight, but have cracks between the boards. The doors are left open more times than they are closed, and the bird is as near in the wild state as it could possibly be, and the eggs are naturally a pretty good egg—a much better egg than can be obtained in a tight building with a mash feed. Still, a 77 per cent. hatch is not an unusually large one for incubators. I would take 200 eggs assorted from 400 and put them in incubators, and then take the other 200 and put under hens, and would get just as good results from the incubators.

Q.—Do you think the colony method with the hopper feeding is the best method?

A.—I do not want the colony method. It is simply a question of fresh air. I do not recommend the colony method. We build our laying houses 132 feet long. There is a twelve-foot feed room in the middle, and on either side of the feed room a sixty-foot wing. Those wings are each divided up into five pens twelve feet wide.

Mr. GRAHAM: Each pen having a separate yard?

A.—No, the five pens all run together in one yard, 60x100.

Q.—Do you have any trouble with frost?

A.—Very little. There are three windows in the front of each division, and below two of those there are shutters and a runway under the middle window, which we open to let the birds out. One of the large spaces is covered on the inside with unbleached muslin, and if the wind is blowing too strong we leave the shutter open on the muslin-covered spaces only. On moderate days we open both shutters, and unless it is stormy and extremely cold we open a few of the top windows through the day.

Mr. BALDWIN: How are the windows opened?

A.—The lower sash is stationary and the top sash is hinged at the top.

Mr. BALDWIN: How many birds to a pen?

A.—Seventy to eighty. We have 350 to 400 birds running together. I don't know what they did in December, but in January the eggs were running 81 per cent. fertile.

Mr. BALDWIN: Your pens are what size?

A.—Twelve by twenty. At Wayland we built a house sixteen feet wide, and the roosting platform was not far enough back from the front, and when I built my houses at East Aurora I made the houses four feet deeper, and have had but few frosted combs, although some of the shutters are left open at night.

Q.—How many roosts have you?

A.—Four roosts twelve feet long.

A MEMBER: When you have the birds running together do they go back to their own pens?

A.—They divide up pretty evenly. We have no difficulty on that score.

Mr. BALDWIN: The sun does not get back inside the house to the place where they roost?

A.—Very nearly. The studding in front is eight feet six inches, and the windows are put in just under the plate, and in the winter time we get the sun back under the platform.

A MEMBER: What are your objections to the colony plan?

A.—The amount of labor and the expense. In Rhode Island the houses are built small because there are very few days in winter when the birds cannot get out on the ground. With us we have long, cold winters, when there are months at a time that the birds do not get out of the house. We have to build a house in which we can get eggs, even when the birds are confined. To do that the birds must have room to move about.

Q.—You aim to keep your birds off the snow in the winter time?

A.—As a rule, yes.

Mr. GRAHAM: You do not want the birds to get on the snow?

A.—If we let them out on the snow, even when it is not particularly cold, it shuts off the egg yield. With our breeding ducks it acts the same way. I have seen a duck sit out on the snow until it froze fast.

Q.—Do you get many cripples?

A.—Very few.

Mr. GRAHAM: What is the cause of cripples?

A.—Imperfectly hatched chicks.

Mr. GRAHAM: Are we to gather from that that the operator is to blame?

A.—Absolutely, where there are many.

Q.—How?

A.—If he balances up the heat with the cooling there will be very few cripples. The birds will come out ripe and strong. If the birds are not properly ripened they will lie in the shell too long, and that causes cripples.

Q.—If he hatched 100 chicks and had three cripples?

A.—In that case they may have been weak germs that did not develop as fast as they should have. Their little bones harden after they begin to breathe the outer air, and we get a crooked neck or a crooked leg.

Mr. TEBBS: What is the cause of blood rings when the germ dies?

A.—When the circulation of the blood in a germ begins it does not begin in the heart, but in a little circle in the outer edge of the vascular area, and sometimes when the germ dies the blood all concentrates in this outer ring.

Mr. GRAHAM: What is the cause of the germs dying which show blood rings after they die? In some machines you see them more than in others.

A.—Uneven heat, or a chill before the eggs are put in. I remember receiving two barrels of eggs from Massachusetts several years ago during a very cold spell. The germs in those eggs developed in from twenty four to forty-eight hours, and then they all died. Not an egg hatched from the whole lot. They nearly all showed the blood ring. They were put in some half-dozen incubators, so that it was not treatment they received in the incubators that caused the blood ring.

Q.—Do you have chilled eggs in July and August.

A.—No, but we do not get as many blood rings then as we do in winter. Any germ that dies is liable to show the blood ring.

Mrs. DAWSON: Would it not be caused by a sudden shock? I was running an incubator, and the morning after the second test something dropped on the floor with a bang. That night I took out forty-two blood rings, and I cannot account for it. They appeared to be all right the first test.

A.—It would take a very heavy jar to make motion enough in the egg to rupture the blood vessel, which is the only way I can see that it would kill the germ and cause the blood ring.

Mrs. Dawson: It made the whole room shake, and I think that was the cause of it.

A.—When I first started my experimental room at my Buffalo factory we had it on the fourth floor. The factory is built on quicksand, and it trembles all the time. Notwithstanding this, we had no unusual number of cripples or blood rings.

A Member: Which are the best chickens, the chickens hatched with moisture or in a dry machine?

A.—It is a question of degree. Too much moisture is just as bad as to have too dry a machine. In applying the moisture under the Moss system, with wet cloths on the eggs, if the cloths are left on too long the ducklings come out with their eyes all stuck up.

Mr. Parber: In testing the eggs what effect will turning them back and forward have at the first test?

A.—It depends on how long you leave it before a strong light. The green operator often holds the egg there so long that he kills the germ, and when he comes to the second test he will find that a lot of birds died after the first test.

Mr. Barber: I am referring to the quick movement.

A. I hardly think there would be anything injurious in the motion.

Q.—Is there any objection to not making the second test if we make the first test on the ninth day?

A.—No. With hen eggs the second test is not necessary.

Mr. Tebbs: In testing eggs with an electric light, will the intense light have any effect on the germ?

A.—I hardly think it is the light, but the heat. We can't get the light without the heat.

Mr. Barber: Do you know how soon a chick begins to move?

A.—Seventh or eighth day.

A Member: Would you advise anybody to use moisture in your machines?

A.—I do advise it under certain conditions. The incubator directions call for it in a very dry room, but under ordinary conditions we do not use it. There are places where it is difficult to dry the eggs down sufficiently even without moisture. In Florida, for instance, it is hard to dry them down, and they have to cool unusually long.

A Member: Do you think you can drown chicks by supplying moisture?

A.—I do not know that it is possible to drown a chick, but when too much moisture is used they come out sticky and plastered up.

Mr. Roberts: I live in the moist part of the Province, and I think I have better chickens coming from dry machines. What should be the average percentage of moisture in an incubator to secure the best results?

A.—That depends on the temperature of the room in which the incubator is run, and the construction of the incubator. An incubator in which the circulation is sluggish needs to be drier at all times than one in which the ventilation is more active. In other words, the movement of the air has more to do with the drying down of the egg than the percentage of humidity.

Q.—What percentage in weight would you evaporate the eggs to make them satisfactory?

A.—There has been no definite amount determined. Eggs do not dry down alike, and there is quite a wide limit between the minimum and maximum amount from which we can secure a good chick.

Q.—How do you judge when you have sufficient moisture?

A.—It is not a question of moisture. It is a question of the ripening of the bird—of the bird using up the yolk food contained in the egg so that it has room to move. We go by the general look of the egg, that is, by the size of the germ, the completeness with which it has enveloped the yolk food at certain stages, and the uneven or ragged edge to the air cell, to judge if the germ is developing properly.

Mr. BARBER: Is there not a greater evaporation going on with the heat in the incubator than there is with the cool air of the room?

A.—Not with a fertile egg.

Q.—I thought the higher the humidity the more absorbing power the air has?

A.—It has until the germ throws out its protecting envelope. The evaporation is then controlled by the physical action.

Q.—What do you mean by being controlled by physical action?

A.—On the fourth day the allantois starts to develop, and that spreads out on the inside of the shell, and the entire contents of the egg are eventually enveloped by it. This organ is full of blood vessels, is the organ through which the bird breathes, acts as the lungs, and the loss of moisture from it is a vital function, not mechanical evaporation.

Mrs. DAWSON: How soon after putting the egg in the incubator does the germ form—how many hours?

A.—If the incubator has been heated to its normal temperature before the eggs were put in, the germ catches that temperature and begins to grow almost immediately. The blood is moving by the end of the second day, and at the end of the third day the vascular area, which forms its first set of lungs is perfectly formed. The heart, which is simply a long tube, and is not yet divided in the middle, beats by doubling upon itself, and the blood is coursing through the blood vessels in the vascular area. If you wish to watch it, take a dish of warm water of a temperature of about 101 degrees and sprinkle a little salt in it. Unless the salt is put in, the fresh water will quickly wash the salt out of the blood, and the germ will live but a short time. Into this warm, slightly salted water break the egg, the same as a housewife would break an egg to use for cooking. As the egg strikes the water it will turn, and the germ will float on top. I remember in one instance of breaking in an egg on a warm summer evening, and after I got through looking at it I set the dish containing it on the top of my desk, where it was left all night. I was surprised in the morning to find the heart still beating. I evidently had my salt solution just right. I set the dish containing the egg in a second water pan, which was placed over a spirit lamp which I used to keep the water warm in which I broke my eggs, and lit the flame. As the temperature came up slowly, the heart beat more and more rapidly, and as it reached 102 it was beating evenly and steadily. As the temperature went up to 110 I could observe a slight jerky motion, and as it rose to 115 and 120 the motion became perceptibly more and more jerky, and as it reached the latter temperature there would be a few rapid beats and then a pause. As I raised the heat to 140 the periods between the beats would be longer, giving three or four or five quick beats and then stopping. As the temperature reached 150 there were a few quick spasms between short rests, and the action stopped entirely.

Mrs. DAWSON: I have heard so many people say in testing eggs that when they forgot to put them back in the incubator they had better hatches?

A.—This was caused by cooling. It was beneficial.

Mr. Baldwin: I had that experience. The eggs were left out all night.

Mrs. Dawson: Are the chickens strong when they do come out?

A.—In my case the results were very satisfactory.

A Member: Will you explain the saving of time in caring for the birds in your laying house over the colony system where the birds are hopper fed under both systems?

A.—In travelling.

Q.—Is that all?

A.—Practically all. At the present time my men take care of 2,000 birds, notwithstanding that they clean the roosting platforms every day.

Q.—Have you any method of dumping the roosting platforms?

A.—No, we have none.

Q.—Mr. Shilling claims that he can take care of 10,000 birds.

Mr. Cyphers: Claiming and doing it are two different things. It depends on how the work is done, how many he can take care of.

A Member: Mr. Shilling has cleaned some of his houses once in two years.

A Member: Do you not find the hens getting fat under hopper feeding?

A.—The hens sometimes do. The pullets do not.

Q.—Have you kept a flock of Wyandottes under hopper feeding?

A.—I had one flock of Wyandottes that laid better than 40 per cent. on hopper feeding. They started to lay in November, and did not let up until the following September. I filled the hopper up once a week. That is all the attention they had. The house was cleaned but twice during the winter.

Mr. Day: How many eggs do I understand you to say you are hatching out of 360?

A.—From 200 to 240 and 250.

Mr. Day: An average of 210?

A.—Better than that. These were eggs from pullets and molting hens through the fall and early winter.

A Member: After cooling the eggs and putting them back in the incubator how do you account for the regulator acting before the eggs get their maximum temperature?

A.—That is because the thermostat, which is the controlling factor, hangs between the eggs and the incoming air. If this were not the case the air might enter at too high t temperature and injure the germs.

A Member: Do you use dropping boards?

A.—Yes, for the reason that the birds can then utilize the room beneath them through the day.

A Member: Do you clean off the boards every day?

A.—We do at the present time. We are trying to see how we can lighten the labor so that a man can take care of 3,000 birds instead of 2,000, as he is now doing. How we shall accomplish that, or whether we shall accomplish it at all or not, I cannot say at this time.

A Member: Under hopper feeding in zero weather would a hen lay enough eggs to pay for her feed?

A.—A hen eats a very little more under hopper feeding in the course of a year than she will under any other method of feeding. The number of eggs she lays will determine to some extent the amount of feed she will eat.

Q.—Do you put whole grain in the hopper?

A.—We crack the corn, but use the barley and wheat whole.

Q.—Do you use any dry mash?

A.—We are not using dry mash this winter.

Q.—Do you scatter any grain in the litter at all?

A.—No. It is all hopper fed.

A MEMBER: Have those hens you speak of been used to the hopper-feeding method ever since they were hatched?

A.—Most of them since the day they were hatched.

Q.—Have you never tried to put laying hens on the hopper-feeding method that were not raised with that system?

A.—Yes, and sometimes it works and sometimes it doesn't. It depends on the condition of the bird. Occasionally a flock will pick right up in egg yield, and then again it will be six weeks before the birds will begin to produce.

Q.—Do you find in feeding from the hoppers that the birds eat and then stand around listless for the rest of the day?

A.—As long as they produce the eggs I don't care what they do.

Q.—Do they produce a good fertility?

A.—Yes. The fertility was running 81 per cent. in December, and will run up 90 or 95 by April. We get a better egg by hopper feeding. With hash feeding we sometimes get a good hatching egg, but more often we do not.

Q.—You do not even like the system of throwing a little grain in the litter occasionally?

A.—It makes that much more work.

Q.—It is the work that keeps you from doing it?

A.—And the lack of apparent gain.

Q.—You do not study to keep the hens busy? You simply study to save work?

A.—We study to produce results. We want the best results with the least labor that will produce it.

A MEMBER: Don't you think on small plants where the labor is not so great that a little grain scattered in the litter would cause the birds to exercise and keep them healthy?

A.—We get just as good results hopper feeding, and we lose less birds during the winter than when we gave mash feed.

MR. DAY: Will you explain about the heat? You mentioned the fact that a certain amount of heat units were necessary to hatch eggs. How do you determine how much it is?

A.—Only by the way the bird is developing. It takes certain conditions to ripen a bird in the egg, just the same as it takes certain conditions to ripen a berry, a peach, a pear or any other fruit or vegetable, and the nearer those conditions are to being right, the better the product.

MR. DAY: That is just the general conclusion you have come to?

A.—Yes.

A MEMBER: Do you base all your results on that fact? Do you suppose all the chicks that are crippled and die in the shell are due to that fact?

A.—From the fact that when we do get the heat balanced up with the cooling we get the desired results. A point in instance: The young man that runs the incubator room at our farm was away for two weeks on a wedding trip. During that time we turned the incubators over to another operator, and until we could get him to cool the eggs and hold the temperature the way we were doing it, we did not get quite the results that we had been getting, and that follows out every time we make the experiment.

The incubators are practically automatic, and any operator can get fair results, but to hatch every hatchable egg requires a careful operator.

Mr. Day: Is there any way of determining by the look of the eggs how much cooling should be given them?

A.—Only approximately. It is a question of judgment in observing the development of the germ. One cannot tell another how to do it to a nicety any more than you can tell them how to test the eggs the first time without error, or determine when a watermelon is just ripe. Experience counts for something in hatching eggs, as it does in everything that men do.

Mr. Day: Have you ever tried setting several machines at the same time and collecting the individual eggs that there seemed to be more difference in and in treating those eggs differently?

A.—No. There would be nothing to be gained by it. As long as there is a difference in the strength of the germs there will be a difference in the development. We can only judge by the average condition of the development of many eggs.

Q.—How many dead chicks do you generally get in the shell?

A.—It depends on the season of the year, and on the strength of the germ. The germ that dies under good treatment before the tenth day is too weak to develop to maturity under any system of incubation. This same statement would apply up to the fifteenth day to some extent.

Mr. Day: Have you the averages of any hatches under hens—a large number of hatches, I mean?

A.—No. I had at one time, but do not recall them now.

Mr. Day: They were not as good as you were getting out of the incubators?

A.—As I remember it, they were approximately the same.

Mr. Graham: The hen in her awkwardness tramps the chicks, which probably brings down the percentage?

A.—I think that can be prevented largely in the manner of making the nests. Still, I have not any use for hens hatching. From the last five I set I got 22 chicks. They were poor eggs, but the incubator at the same time, on the same eggs, gave me a 60 per cent. hatch.

Mr. Day: As the result of actual count of all the hens set this summer we have a hatch of 85 out of the fertile eggs, and a hatch of 71.5 of the total eggs set from the hens as an actual count. In the dry machines we have 71.8 of the tested eggs as compared with 85 under the hens, and 63 of the total eggs set as compared with 71 under the hens.

Mr. Cyphers: There is a difference in the handling of incubators. I can give you the experience I had on a large poultry farm where they are using nearly one hundred of my machines. There were two operators, one operator taking care of the machines in one-half of the room, and the other the other half. The eggs were divided up each day as they were gathered, and one operator averaged over 78 per cent. of all the eggs set during that season, while the other operator brought off something like 67 per cent. I visited the plant several times during the season until I finally located the trouble. The incubating room was well arranged and ventilated, and both operators had an equally good chance. The eggs were running very good indeed, and they were getting a strong germ. I stayed one evening talking with the manager until one o'clock, when we went out and went over the machines. The machines taken care of by the lad who was not getting the results were not as nicely regulated as they were on the other side of the room, and the difference in the temperature showed that he had

not tested up carefully and taken the necessary pains to keep the thermometer on a fertile egg. They were running with a close-contact theremometer. The machines were given to a man who looked after those points more carefully, and the hatches improved.

There is a great deal, too, in feeding for a good egg. Feeding shows more quickly on a duck than on a hen egg. We can feed a duck so as to get almost any kind of an egg. I remember one customer who was not getting any hatches at all to speak of. He took out as low as nine ducks from one machine. I found after careful inquiry that he was giving too much mashed turnip. It was producing an extra large egg, but an egg that was watery and of poor quality. He cut down the turnip, and within a month thereafter his hatches began to improve.

Mrs. DAWSON: What effect would cabbages have?

A.—I think any vegetable food given too liberally would have the same effect.

Mr. ROBERTSON: If not mixed they would not eat more than they needed?

A.—Probably not. The incident referred to is simply an illustration of what we run up against among mash feeders who force their birds to eat what they do not want.

Mrs. DAWSON: How do you feed green food? Do you supply the hens every day with something?

A.—We have been hanging up some cabbages, and they clean them off by noon. We gave them sugar beets as long as they lasted; just a little for a relish. I believe green feed is a good thing to keep the birds in condition. Still, in one experiment on a pen of Barred Rocks I gave them no green food at all during the winter. Two or three times during the winter I fed a bag of wheat screenings, but this was the only variation from the usual feed of wheat, barley and cracked corn.

Mr. GRAHAM: There is one thing about incubation, about the turning of the eggs. How soon do you turn them after they are put in the machine?

A.—The evening of the third day.

Mr. BALDWIN: When you don't turn the eggs for the first three days, don't you take the trays out and turn them?

A.—Yes, we turn the trays after the first day.

Q.—Is there anything in having regular hours for turning and cooling the eggs?

A.—We try to have regular hours for the work. The more regular and methodical the operator is in his work the better hatches he will have.

Mr. TEBBS: Do you think a thunder storm will affect a hatch?

A.—No, I do not think so.

A MEMBER: Will it affect a hatch with a hen?

A.—It might be possible if the lightning struck near her.

Mr. TEBBS: What cellar space do you need for a machine holding 250 eggs?

A.—We put the machines as close together as they will go. In a room holding six to ten machines we make the ceiling eight feet high, and nine feet for anything above that. The cellar at the Model Farm holds 142 incubators, and is ten feet high.

Mrs. DAWSON. Supposing you were hatching in a room above the cellar that had about five feet of water in it, would that have any effect on the incubator?

A.—I do not think so.

ARTIFICIAL INCUBATION.

By L. H. Baldwin, Deer Park.

Mr. Graham asked me if I would be prepared to discuss the question of artificial incubation, and I might as well take the time now to speak to you.

We have heard a great deal about this CO_2 (Carbon dioxide), and perhaps the history in connection with it is a little bit curious, as far as my experience has gone. After making for a number of years what was acknowledged to be a considerable success in artificial incubation, then upon changing my conditions, enlarging my poultry plant, and erecting a special incubator cellar, I ran right into this trouble of white diarrhœa. The question for consideration that came to my mind was what was the distinction between the two conditions under which I had operated my incubators. The fact was that in one case, I had two incubators in a very large room, in the other case, I had six incubators in a comparatively small room, and as there was in one case six lamps burning continuously night and day, even with the windows open, and in the other case only two, this led me to believe that the CO_2, produced from the lamps, was proving injurious in the one case, while it was not felt to be injurious in the other. I therefore thought that the best thing I could do, was to get away from the CO_2, and to do so by introducing a systematic method of ventilation.

Now it seems from this scientific investigation made by Mr. Day, that in the natural condition under which eggs are incubated: there is a high percentage of carbon dioxide in the air under the hen. I do not think that the fact that they ascertained this large amount of CO_2 under the hen is after all in real conflict with the other, because, we must bear in mind that while the carbon dioxide may be increased by the burning of the lamps, there are other gases given off in the combustion of coal oil that are more poisonous, and probably have more injurious effects on the embryo life in the eggs.

Just the day before I came up here a doctor in Toronto called my attention to an article in the *British Medical Journal* of December 22nd, 1906, by Dr. Henderson on "Acapnia as a Factor in Shock," and I found it particularly interesting on this point. I will give you his conclusion and some of the illustrations he made. We are told that in the fœtus of animals the blood shows a higher percentage of carbon dioxide. In breathing—we do not entirely empty our lungs every time we breathe. When we draw in fresh air, the fresh air comes in more heavily charged with oxygen, and it mixes with the air in the lungs and this becomes more heavily charged with carbon dioxide, and consequently in our lungs there is much higher percentage of carbon dioxide than there is in the air we take in fresh to our lungs. We must admit of course, that in nature things are balanced for a purpose, and the evidence that the carbon dioxide and the oxygen is balanced, and is balanced for a purpose, is shown by the experiments he made. For instance, if you will force yourself to breathe quickly several times and thus dilute the carbon dioxide in your lungs, you will find you then will naturally want to stop breathing, you do not want to breathe for a time, and the argument is that you have emptied the lungs as it were of carbon dioxide, and you have to stop breathing in order that the carbon dioxide may again acquire its proper equilibrium.

Dr. Henderson made some interesting tests to show that the effect of admitting more oxygen into the lungs increases the palpitation of the heart;

it affects the amount of blood driven through the veins, which of course, may have an injurious effect on human life. He thus experimented with some animals, and when the dilution of carbon dioxide in the lungs was carried to an extreme extent, the shock was so great that it caused death. That may lead us to understand why there should be a proper equilibrium between the oxygen and carbon dioxide in the air surrounding the eggs during incubation.

To some extent after all, it may be necessary to have more carbon dioxide than is found in fresh air surrounding the eggs in an incubator. Just exactly how that is to be produced, we have yet to find out; whether by reducing the amount of ventilation in the incubator or not I am not sure. In the years 1904 and 1905, I had a disappointing experience with heavy mortality in my artificially hatched chicks, and not only this, but the development of the birds later on was most unsatisfactory. After killing the cockerels for table purposes they were disappointing. We had great difficulty in putting flesh on them, even with heavy feeding. I had difficulty in getting satisfactory results from the pullets; they laid very small eggs, and they continued for a long time to lay small eggs. That disappointed me very much indeed, and that continued for two years. I then installed a very complete ventilating system to improve the air conditions in my incubator room.

In each corner of the room there is a 6-inch drain pipe coming down through the earth and into the foundation, and rising in the room about five feet so that cold air is supposed to go down these tubes and be supplied in the room at a more moderate temperature. Then I trap all the fumes from the lamps of my incubators. I have tin cones that come down over the lamps and catch the hot air, which is then carried off in pipes which run to one point in the ceiling of the incubator room, and there in one large stand pipe runs up clear through the roof of the building.

Like all ventilating systems that in theory should work just so, in practice you will find them at times working backward. I found that true to a certain extent. The air in these tubes would be either coming into the room or going out. I do not believe you could detect the slightest odor of coal-oil lamps burning there, and the air of the room was just as fresh as you could make it. In the cold weather I keep the windows shut.

I know that Mr. Graham was having better success with lower temperatures, and he was of the opinion that I ran my incubators rather too high, although in my past experience when I was making a success of artificial incubation, I was undoubtedly getting better results with rather high temperatures than those given with the directions furnished by the Cyphers Incubator Company. For instance, when their incubator was brought on the market, the first directions I received said that I should run the temperature at 102½ degrees on the eggs; Cyphers' incubator directions were to run the temperature somewhat lower. I think 103 to 104 degrees is the better temperature taken on the top of the eggs.

In operating my incubators I found that when I took the eggs out of the incubator to turn them during the early period of the hatch, the animal heat would go out of them very quickly. When the chicks incubated under cooler conditions hatched, they struck me as being a very "flabby" lot, not as bright and active and thrifty, as chickens hatched under higher temperature; but wishing to profit from Mr. Graham's experience, I started off running my incubators last season on rather lower temperatures. At first the results looked encouraging; the percentage of fertility of the whole of the eggs set was 71 per cent. and the germs looked

promising. I started my second machine also at a low temperature, and the third machine at a low temperature. The first tests in both of these machines I called fairly satisfactory; but when the first machine hatched, it hatched badly. The chicks were not strong chicks, and as a matter of fact, at the end of two weeks time I had none left. That showed me that I was not getting nearer my goal,—in fact I was getting farther away from it—and the question was raised, was I running machines at a high enough temperature? I at once raised the temperature of the second machine which had then run about two weeks, and the temperature of the third machine which had run about a week, hoping that I might make up for the loss of heat during the first period of the hatch, and I may say that the result in these three hatches was practically a complete failure.

Then I tried running the temperature higher, and took the temperature under the hen. It is difficult to get the exact temperature under a setting hen. The way I did was to take an ordinary clinical thermometer; then take a piece of paper, and by cutting two slits, I took the clinical thermometer and slipped it in and out through the slits. Then I went to the hen and placed that thermometer under her upon the top of her eggs and I took that as being a fair test. The temperature I found varied from 103½ to 104½ degrees. I argued from that that I ought to run my incubators at as equally a higher temperature on the top of the eggs.

Then I look at my records. The method I adopted for keeping records for the sake of comparison is this: You have got to bear in mind the hatchability of the eggs as distinct from the hatchability of the machine. I look at the hatchability of the eggs in this way. First the number of the eggs that are fertile, then the percentage of chicks I get out of the total. You know if you have a flock of birds which show a poor fertility, my experience is that you must look for a poor hatch. If you have a machine that has good powers for hatching, it cannot make up for the lack of fertility in the eggs. Having obtained a certain number of fertile eggs in the first test, then I take the percentage of living germs in the second; this percentage shows the ability of the machine to develop the eggs that are fertile, and the second percentage I take as the result. That is, I count up the number of live chicks and find out what percentage they show out of the living germs, and I multiply thes two percentages together, and that gives me what I call, the hatchability of the machine.

Then, with regard to the temperature. I divide the period of hatching into four sections; the first four days as the days in which the germ is started. I want to know what is the best heat to start the germ; then I take the average of the first ten days as being the temperature at which I develop the germs; then I take the average from the eleventh day to the eighteenth day, which continues the development of the life of the chicken in the egg. I make this division because, undoubtedly, there is a change in the egg on the eleventh day, the life "quickens." The animal heat we know, rises on the eleventh day; and then I have the record of the temperature on the last three days to show the temperature to which the chicks are subjected to, just before hatching.

I went back over the four years of my records and struck the averages. I struck the averages of the percentages in hatchability. I took those that came above the average, and those that came below and I find that the average of the higher averages were the ones with the highest temperature in the beginning of the hatch. When I again divided these up, I found the highest of these were the best percentages; that led me to the conclusion

that generally speaking I ought to run my incubator at a higher temperature.

Mr. Nix referred to the work by Dr. Derests, who was investigating the cause of deformities and experimented with eggs. It gives some most interesting and suggestive results along this line. When he put the egg under a comparatively low temperature but still a temperature that was sufficient to develop the germ, that germ would in eight days, if I remember correctly, develop a chick just to the point that a chick would develop ordinarily in twenty-four hours. If you then apply the proper heat to that germ you can never develop it up to the point of living; it would increase and grow but its growth would be slow and sluggish, and in the course of time it would die before it was excluded. Without going to that extreme, I think I have seen the same thing happen with regard to incubation. I have noted in running an incubator at a rather high temperature for the first twenty-four hours, continuing it for two or three days, that you get more vigorous development of the germs. That was shown right throughout the hatch in this way, that where I would set the machine at a low temperature, the increase of the animal heat in the egg would be slow, and even if later on I increased the temperature of the machine, I could not increase the development of the germs as indicated by the amount of animal heat. You know the variation between a suspended thermometer and a thermometer on the egg will be say three degrees to begin with, it will come to two degrees and then to one, and ultimately the temperature on the egg may be higher than the temperature of the suspended thermometer. With the high temperature to begin with, the animal heat of the egg would increase so quickly that on the tenth or eleventh day it would be equal to the temperature of the suspended thermometer. If you started with a low temperature, you probably would not bring the temperature of the eggs so as to be equal to the suspended thermometer until the fourteenth, fifteenth, or sixteeenth or sometimes the seventeenth day, so that led me to the conclusion that perhaps we ought to consider more minutely the temperature that we give to the eggs for the first twenty-four hours possibly for the first, second and the third day, and to make comparisons between the incubators with similar eggs.

Of course in making this comparison, I mean that after the fourth day the two incubators would be run at similar temperatures. Now what bearing has that on this question of "white diarrhœa?" It has led me to suppose that in running my incubator at a higher temperature during the past season, I undoubtedly hatched an entirely different chick. That in dissecting some chicks that died I found the yolk was almost entirely absorbed. Certainly they were in a most natural condition. I could not see any reason why they died; there was no evidence of white diarrhœa. I know in some chicks we had later on, I could not find a particle of the yolk left, it was absolutely gone.

Then the development of these birds during the summer was most satisfactory, and in the fall, during the months of October and November, these pullets were growing like the birds do in the summer. The pullets began to lay with a small egg, but almost immediately the size of these eggs came up. I must admit that my percentages as a whole in the hatching was low; that may be due to the fact that I was breeding to a considerable extent from stock that had been improperly incubated the previous year.

I had one curious experience. I sent forty dozen eggs to a man in Quebec, and they had about 36 hours railway journey. I sent him twenty dozen in the first lot (240 eggs), and I told him that no matter what the directions were which he got with the incubator, I wanted him to run the

incubator at a high temperature and to keep the temperature on the eggs at 102½ degrees. When these birds hatched he got 197 chickens out of the 240 eggs I sent him. He afterwards got twenty dozen more, and out of the forty dozen he secured from me he reported a hatch of 77 per cent. of the total eggs, which was considerably higher than my own results at that time. That leads me to observe that I found the ordinary incubator thermometer most unsatisfactory. I had, I suppose, fifteen or twenty thermometers, and I found that they varied greatly; on testing them by a standard thermometer, and recording their variation, there would still be a variation in the same incubator, place them as accurately as you could. I found there was great variation between the thermometer mounted on metal and those mounted on wood. With a large bulb there would be considerable variation from one with a small bulb, sometimes two degrees, in some cases three degrees. What happens? Suppose you buy one of these thermometers, and you are told to run the machine at 102½ degrees, and you have a thermometer that may be a degree high you are really then only running the eggs at 101½ degrees. The next man may get a thermometer that is 1½ degrees too low, then if you run that same thermometer at 102½ degrees you are really running these eggs at 104 degrees, so that so far as these thermometers are concerned they are very unsatisfactory.

Then I got a "veterinary thermometer," which of course is far more accurate, and I used that in taking the temperatures. I refer to that point to show how one may be misled in running their incubators with thermometers that are supplied by incubator manufacturers. You must remember that these thermometers do not cost very much, as they are turned out by the factories. They are cheap and unreliable. Now I think along with that comes the question that a good deal of the difficulty was overcome by cooling, and I think that if you will give the higher temperature to the eggs in the first few days in incubating that they seem to get a characteristic vigor, and that they will then stand and perhaps require more cooling. With regard to the question of moisture, that is a difficulty in my mind. We know that Mr. Graham, of the Ontario Agricultural College, in using the "New Prairie State" machine, is keeping water constantly in the incubator. He has shown some tests made as to the evaporation that takes place in the egg, and comparing it with its hatchability, and the conclusion he came to was that it had really very little to do with it; that one egg would evaporate a large percentage, another egg would evaporate a small percentage and would hatch absolutely as strong a chick. We hope we are going to get from Prof. Day's work some use for the water, but the point comes to my mind that the question of ventilation in the incubator especially in the very earliest stages of the hatch must be considered very carefully. They used to say open or close the ventilators as you see the egg evaporating.

My experience led me to the conclusion that the ventilation had little or nothing to do with the increase of the air cell. Each egg seemed to control its own evaporation, but I think the old directions that the incubator manufacturer gave us years ago were to keep the incubators closed at the early part of the hatch, and to open them as the hatch progresses, may have had some bearing on the question of carbon dioxide. Mr. Day has told us the amount of moisture that the eggs give off that maintained the humidity, in the incubator if the ventilators are kept closed. There may be something in the effect of carbon dioxide inside the machine, by not allowing so much ventilation. We know that the Cyphers' Incubator Co. and the "Model" machine have provided open bottoms to give fresh air. I think that probably is a good idea, so far as the later period of the hatch is

concerned, but I believe that that may be a little bit of the cause of the difficulty we have had in incubating, that there is too much ventilation—too much fresh air—in the earlier part of the hatch.

Mr. Tebbs: To determine that point I put a covering over the eggs to prevent the circulation of air during the earlier portion of the hatch. I do not see that it made any difference in the development of the eggs.

Mr. Baldwin: I would like to say before closing that Mr. Graham and I had great difficulty in finding a case of white diarrhœa with the ordinary broody hen hatching chickens. But my attention was called to it last summer, and Mrs. Dawson won't mind my mentioning it. She told me she had a case of it on her farm, and I will describe the condition in which it was found. There were three hens that were set under the same conditions, and the chickens that they hatched were practically cooped in identically the same way. The white diarrhœa developed entirely with the chickens that were hatched under one hen.

A Member: Did the hen stay off the eggs long?

Mrs. Dawson: No; I watched them very closely.

Q.—Did they have the same amount of eggs?

A.—There were three hens set in the same packing box. They appeared to be good, strong chicks when they came out, and when they were two or three days old I noticed one with it, and then three or four got it.

Mr. Baldwin: With regard to the hens, I can quite conceive how it would occur, just through the lack of heat. It has been explained to me in this way, that if a hen becomes broody, its natural temperature does not rise; she only applies more heat to the eggs from the breast. A doctor in Toronto explained the thing to me, that it might possibly be the effect of a nervous condition. We can see that in a human person by blushing; there is a rush of blood to the face, and that will produce heat. There are some persons who have that sort of nervous make-up that nothing will make them blush. Some hens have nervous make-ups, that while they get broody they do not give quite enough heat to their eggs during the process of incubation, and the chicks they hatch consequently would not have that vigorous development. Increased heat increases the circulation of the blood, and with the colder conditions in which that hen hatched her eggs might cause the white diarrhœa, and as with the artificial hatching of the eggs this might be overcome by raising the temperature.

Mr. Graham: There is a question comes in on moisture. Had you moisture present in a very low temperature, would not you get as much stimulation as you would in a dry machine at a high temperature?

A.—That is quite possible. I ran my machines without moisture, and I have always done so except in two machines. I put moisture in just before the chickens are hatched.

Mrs. Dawson: What condition did Mr. Graham find those chickens in when you sent them to him? Was there any difference?

A.—There was some slight difference, but not enough to say much about it. The seeca was not in just the condition that we often find incubator chickens. There was not a clog in the seeca, though it appeared to me that that particular cause might have been due to a chill, possibly, or indigestion.

Mr. Robertson: When you ran the incubator where there was no ventilation did you have good luck?

Mr. Baldwin: No. The incubator men say to turn the trays and always reverse the trays so as to even up the heat. My curiosity with regard to

applying the various temperatures in the starting of the germs, and in the development of the germs, led me to try this experiment. I have a small machine, in which the tray holds a hundred eggs. I tipped that machine so that I got an uneven temperature, and I never reversed the tray. There was an uneven temperature, and I had the best hatch of the season. I divided my eggs evenly between the four sections of the tray. I have a number of Wyandottes running with a farm tenant, and I use his eggs in my incubators to supplement mine. The chickens are running free, and the eggs hatched very well indeed. I took sixteen of his eggs and put into each section, and I took nine of my eggs, making a total of 100. With the suspended thermometer hanging in the middle of the egg chamber I had four other thermometers, one on each section of the tray. When I took that tray out to turn the eggs, these were shuffled around, but all kept in their own section. I took four readings a day, taking the standard readings of the suspended thermometer and the four thermometers on the eggs.

I have worked the whole thing out in averages, and the result in No. 1 section was that out of 25 eggs I hatched 16; in No. 2 out of 25 eggs I hatched 22 chickens; in No. 3 out of 25 eggs I hatched 17, and in No. 4 I hatched 12. That was 67 per cent. of the total.

Mr. Day: Did you know which side of that tray was the front?

A.—Yes. That is a machine built by the Toronto Incubator Company.

Mr. Baldwin: I might say that I weighed every individual egg, and I noted the evaporation and the loss of weight in each section. When I came to hatching the eggs, I evened up the temperature of the machine and divided my incubator into three sections; that is all I could do. I put Nos. 1 and 4 in one section, and Nos. 2 and 3, each in one, and I was able to toe-mark the chickens. Then I recorded the mortality, and out of 67 chickens in two weeks' time I had 61: in No. 1, where I had 16, I raised 14, and in No. 2, where I had 22 at the end of two weeks, I still had 22; in No. 3, out of 17, I had 14, and in No. 4, out of 12, I had 11.

Mr. Rice: What were the temperatures?

A.—The temperatures averaged in this way: In No. 1 section the temperature for the first four days was 101.9 degrees: to the tenth day, 101.8; and up to the sixteenth day it was 102 degrees; in No. 2 the temperature went to 102.7 degrees, then 102.6, and then 103.4 degrees.

A Member: That was on the eggs?

A.—Yes. I have not taken the four temperatures on the eggs during the hatching, because I could not do that with the thermometer lying on the egg, because the first chick that came out knocked it over. In No. 3 it was 104.1 and 104.8 degrees, and in No. 4 it ran up to 102.8, 102.7, and 102.4 degrees. The total averages of the temperature were 101.9, 102.9, 104.4, and 102.6. The hotter end of the machine did the better hatching, and the section starting the eggs at 102.7 degrees, which is nearly 103 degrees, was the best result. There is one other interesting point, and that is this, that in No. 3, where the temperature was highest, the temperature of the thermometer on the eggs equalled the temperature of the suspended thermometer on the eighth day, and that showed an extremely vigorous development of animal heat. In No. 2 pen, which was the next hottest, the temperature came together on the twelfth day, and in the fourth section the temperatures cames together on the fifteenth day, and in the coldest section they came together on the sixteenth day. That carried out that same conclusion that I came to before—that the amount of heat you apply to the eggs during the first twenty-four hours has a direct bearing on the animal heat right through the hatch, and, I think, gives a certain stamp of vigor to the embryo chick

which probably lasts its lifetime, and I would suggest that for a point to consider for those who are going to start incubators during the coming season.

Q.—That is the suspended thermometer?

A.—The suspended thermometer for the first four days was 104.4 degrees, up to the tenth day 104.3 degrees, and then I reduced it to 102.2 and 102.9.

Mr. Rice: What do you call a safe temperature at which to operate the first three days? You speak about giving high temperature; somebody may go too high.

A.—It seems to me 103 on the eggs; it must be an accurate thermometer. It seems to me if you have an accurate thermometer, 103 degrees is a fair temperature for the eggs. I would not be afraid if the thermometer went up to 103½ or 104 degrees, but I would prefer keeping it at 103 degrees on the top of the eggs. The description given in the Government report at Washington on the method of incubation used by the Chinese showed a complete change on the tenth day; and, as far as I can see, for the first ten days they were in such a closed condition that there must have been very little ventilation, and there must have been a very uniform temperature up to the tenth day.

BROODING.

By J. L. Nix, Homer City, Pa.

On the general subject of brooding, I will say that my experience has largely been limited to lamp brooding and outdoor work. Brooding on an extensive scale has been more a matter of observation on my part than anything else. Sometimes observation is valuable, and sometimes it is not: it depends on the observer. I think the consensus of opinion is, at the present time, that the large pipe brooder is not an entire success. Although a number of people have made a success of them, yet there have been too many failures, and the present tendency is to use some form of individual nursery lamp brooder in which the temperature and conditions can be more accurately controlled the first few weeks of brooding. The brood at a later period of growth can be transferred to the regular pipe system, and the development completed when the temperature conditions are not so essential. That applies more particularly to winter rearing. When chicks are reared in the natural season, spring and summer, I prefer the outdoor system. Rearing in the open range has the advantage of producing birds of greater vitality.

There are two fields to be considered in the artificial process—the large commercial plants, and those that raise chicks in a small way. The subject deserves the greatest consideration from the side of the small grower from the fact that 99 per cent. of the poultry is produced by farmers and those who use natural methods, or one or two incubators. Our main poultry production comes from the farms, and those methods that are adapted to their use should receive our best attention. Some farmers raise poultry extensively during the winter time, but they are exceptional. In the soft roaster districts they hatch their chickens in the autumn.

They get well started before the cold, rough weather comes, and are transferred from the brooder houses to small colony houses, and then mar-

keted in the spring. To start chicks successfully during warm weather in the fall almost any kind of a brooding apparatus may be used, but when it comes to brooding chickens out of season, during the months of December, January, and February, we have the most difficult problem with which the artificial method has to deal. To raise them successfully requires more than a perfect brooder. The stock that produces the eggs must be strong, well housed, and carefully fed, so as to secure eggs with a maximum amount of vitality. They should be placed in the best incubator obtainable, one with the highest hatching power, so as to secure the maximum amount of vitality in the young chicks. The arrangement of the brooder house and brooders must be almost perfect, and feeding carefully looked after to secure the best of results.

Many brood houses are heated with the pipe systems. The open pipe system has the advantage of perfect ventilation, but can be criticized because it keeps the brood room too warm, and the chicks cannot withstand the change to out of doors; while if the other style of pipe system is used—the enclosed hovers—the brood house can be kept at the proper temperature, the temperature can be controlled in the brooders with a regulator upon the hot-water heater, but the difficulty is with the ventilation in the enclosed brooders. The ordinary person will succeed the best with the individual lamp brooder, from the fact that each flock is surrounded by those conditions which best suit its age or number. For winter rearing the brood house is heated, if made small, with an ordinary stove or the large brood house with a hot water heater and a coil of pipes upon the rear wall. The house is heated just comfortably for the chicks during the day. If the fire accidentally goes out during the night the chicks are perfectly comfortable and safe in the lamp brooders. It is advisable to have a regulator on a nursery brooder, just as essential as a regulator upon an incubator. It is a time saver and a valuable acquisition.

A MEMBER: Do you think a brooder needs a regulator on it?

A.—That depends on the operator. A skilled operator may not require a regulator, but the average person will succeed best with the regulator.

A MEMBER: Do you advise keeping the food in for the chicks all the time?

A.—Not the first ten days; after that hoppers may be used. One of the first types of brooders for large plants put on the market was the ordinary pipe system, with hover top and curtains on each side, in which the chicks could run inside and out. There are a multitude of modifications of that brooder. Another type had a tight board back and, in place of the curtain, a hinged front. You can see this at the Niagara Farm. A regulator is used on the heater for maintaining a uniform temperature of the water in the pipes, then the temperature in the pens is controlled by admitting more or less air through the hover tops. The hot water heater regulator keeps the first pen at a proper degree of heat; in the other pens the temperature is controlled by ventilator slides in the hover tops—three or four openings, three inches in diameter in each hover top.

Mr. BALDWIN: Are the chicks put in there direct from the incubator?

A.—They were last season. They are trying lamp brooders this season.

Mr. GRAHAM: They are always looking for improvement?

A.—Yes. Another development of the pipe system was the open pipe, containing from six to eight pipes, about seven inches from the floor. No hovers are used. The temperature can be maintained to perfection. You can have an unlimited amount of ventilation. The first few sections are usually covered with a light cloth screen, to throw the heat down to the

chicks. I have seen those brooders used in and around Boston. Some people are successful with this system and others are not.

A MEMBER: Is not the cause of so many chicks dying because conditions are not right for the first two weeks?

A.—I think that the first ten days is the critical period in a young chick's life. I do not know whether Mr. Cyphers would like me to give a drawing of his brooder or not. (Mr. Nix then proceeds to draw a diagram.)

Mr. BALDWIN: The passage way for feeding and clearing is down each side?

A.—Yes, over the shelf brooder.

Mr. BALDWIN: Those shelves are six feet?

Mr. CYPHERS: Eight feet across and glass on top. The hover is twelve inches wide; now we have increased that.

A MEMBER: How is the fresh air supplied under the hover?

Mr. NIX: This is a single curtain, and the heat comes through here. I do not know whether it reaches to the floor or not.

Mr. CYPHERS: It does not reach to the floor.

Mr. NIX: The fresh air comes in through the slits in the curtain.

Mr. BALDWIN: How long would those pipes be in each section?

Mr. CYPHERS: Full length of the house—150 feet.

Mr. BALDWIN: One pen?

Mr. CYPHERS: Yes, divided up every two feet; on the top shelf there are two feet on the top, every three feet on the second, and every twelve feet on the third.

Mr. BALDWIN: Which is the top and which is the return?

Mr. CYPHERS: The top is flat and the bottom is return.

A MEMBER: How high is that top shelf from the floor?

Mr. CYPHERS: Sixteen inches between. I tore down one shelf and made three divisions instead of four.

Mr. RICE: How high will each of those shelves be?

Mr. RICE: They are sixteen inches now; how high will they be?

Mr. CYPHERS: From twenty to twenty-four inches. On a new lamp brooder we made it to go over the top. The top is sixteen inches, and the next is twenty, and the next is twenty-three. The sixteen-inch pipe did not give the older chicks as much air as they should have, before you take them off the shelves.

Mr. BROWN: Isn't there difficulty in getting dead chicks from under the hover in the top shelf?

A.—No, we have a cleaner.

A MEMBER: How deep in?

Mr. CYPHERS: Four feet.

A MEMBER: Is that shelf under the brooder higher than the other shelves?

Mr. CYPHERS: No; the first shelf is sixteen inches up, and the hover is just below the lowest shelf in the brooder.

A MEMBER: Do you think the pipes in the side are better than on the top of the chicks?

Mr. NIX: I think that is immaterial.

A MEMBER: The hen heats them from the top. Don't you think it would be more natural to have them heated from above?

A.—When you get a long brooder I would not care whether the heat came from the top or the side. This pipe on the side increases the circulation of air under the hover; that is one thing in its favor.

Mr. Baldwin: Do you use a riser at the end of your pipe system to increase the circulation. I have seen it recommended. It was said that by putting the pipes like this you get a better circulation. What they meant by a riser was when you get to the end of the brooder house to have the pipes higher. I believe it assists the circulation.

Mr. Cyphers: It depends on the length of the house, and whether you have not rise enough at the ends of the system. I have seven inches in that, and four inches is ample.

Mr. Nix: The heater is very low.

Mr. Cyphers: It is only needed when you have the pipes on a level.

A Member: The first chicks are kept in twelve weeks?

A.—No, six weeks.

Mr. Nix: The chicks are in a long, narrow row, so that they can put their heads out and still have their bodies warm, the same as under the mother. The heat spreads over the top, so that there is not a very great variation between the different parts of the hover. When a circulating air current is employed as in this case the heat distributes itself quite evenly. These various systems of brooding practically cover all the methods of piping there are in general use.

What is most essential in brooder design is to get a uniform temperature and apply the heat from the top, if possible, and to obtain forced ventilation. In a great many brooders ventilation is secured through the curtains. This is accidental ventilation. For example: A brooder is heated with an overhead hot water tank or pipes, with curtains upon one or more sides. All the air the chicks get is what diffuses through the curtain. This system will work fairly well in cold weather, provided the brooder is heated sufficiently warm. If, during the night, the temperature runs down and the chicks crowd, a large number of them will smother. In hot weather these brooders, ventilated in this manner, cannot be used at all. In those brooders which have top heat, forced ventilation is secured by surrounding the lamp chimney flue with a cold air drum that forces the fresh air into the hover constantly. There is another type of the bottom heat brooder, with or without central heating drum, that draws the air from outside and forces a warm current into the hover constantly.

Q.—What advantage is there in the round hover?

A.—Less danger of crowding. I like the round hover for the reason the chicks get more curtain. The chicks naturally want the round hover because it is the nearest approach to the hen. Where you have a square hover they have a tendency to crowd in the corners. Here is a brooder that has the curtain all around, and you have forced ventilation, and the chicks can get out of the sides. One advantage it has in warm weather is that after the chicks are a few days old the curtains may be taken up, the same as the lady does her skirts in muddy weather, and you get absolute fresh air conditions.

There is an impression among many that chicks do not require heat, or at least very little heat, in warm weather. This is a mistake. We have raised chicks in July and August in an open field, without shade, successfully, and we maintained the hover temperature at 105 degrees. Heat is just as essential under the hover in warm weather as at any other time of the year. When a hover is used in a large colony house they could be confined around the hover by a hardware cloth or a board fence until they could become accustomed to going in and out. After three days the fence may be removed and they may be allowed the range of the building, and, in the course of a few days more, may be allowed to run outdoors. It is advisable

when using the colony system to use portable runs with the colony houses, and confine them the first few weeks, so that in case of sudden storms they will find their way back and will not require the attention of the attendant.

Mr. Baldwin: Where did you place the thermometer when you got it up to 105 degrees?

A.—It is 4½ inches from the floor. On a line with the chicks the temperature is much lower.

Mr. Baldwin: What would it be down there?

A.—About 85 degrees.

A Member: At what temperature do you recommend to run the Universal Hover?

A.—At 110 degrees in the winter and 105 degrees in the summer. The correct brooding temperature varies with the position of the thermometer and the make of the brooder. While 105 degrees is right for the Universal Hover, it does not mean it is right for any other brooder, and the way to determine the right temperature is by the appearance of the chicks. Watch the chicks under the brooder, and bring the temperature up till they flatten out, and when that temperature is reached it is the correct brooding temperature. You can flatten chicks out with heat; I mean a normal chick. You find in this brooder that it takes a temperature of about 105 degrees to flatten them out. In some it takes 85 degrees, depending upon the position of the thermometer. There is one advantage with the circular hover, and that is the chicks will have their bodies inside and their heads near the curtain The hover is a little cooler around the curtain, the air is fresher, and they will keep their heads there. Another thing in regard to the operating of the hover: You hear the expression that the chicks do not go under the hover; the reason is there is not enough heat. If they do not go under the hover it is because there is not sufficient heat to attract them.

Q.—Is that not due perhaps to their being overheated the first few days and driven out?

A.—As soon as chicks are overheated or chilled you cannot tell anything about the brooder temperature by their appearance, because they are hot a while and cool a while, and in a feverish condition. I think the success of brooding chickens artificially is having the brooding conditions the first few days that are similar to incubating conditions; not that the brooder is constructed like the incubator, but it has to be good enough to hatch eggs in, because in the four days that succeed the exclusion from the shell incubation is not really completed until the yolk is absorbed. The little chick that comes from the shell is very much like an infant; it has a tendency to lay around and sleep, and the nearer you approach the incubator conditions in the brooder at the start the better it will be. The temperature would run from 85 to 90 degrees during this period, on a line with the chicks. Heat is quite beneficial if you do not give too much. That is one reason why I like the regulator on the hover. When the chicks are put under a self-regulating hover I know the heating conditions are all right; I do not need to worry any more about those chicks than if they were eggs in an incubator; while if you have to depend on turning the lamp up and down to control the heat in operating brooders, especially out of doors, where you have extreme temperature variations to contend with, from 30 to 60 degrees in a day, that means that the operator has to be on hand a good part of the time.

A Member: What do you consider the best kind of litter for the brooder?

A.—Cut clover, alfalfa, or straw. In the summer time, when litter is not needed to keep the brooders warm, I use paper. I am lazy, and I do not like to clean the brooder. I take a piece of wrapping paper the size of the

brooder and put it on the floor; then once a week I take that paper out and put in fresh.

A MEMBER: You use rather rough paper?

A.—Just the ordinary paper. I often use the newspaper.

Mr. GRAHAM: Some wrapping paper we get is very smooth.

A.—If you have chicks that have not been hardened and you put them on smooth paper you get straddle-legged chicks.

Q.—What would be the objection to using ordinary earth?

A.—None at all. I used it in outdoor brooders with earth, and there is nothing better. There is only one difficulty, and if you know that you will have no trouble. In those brooders in which the air comes direct from the inside of the brooder to the lamp the dust that is raised by the scratching chicks will stuff up the gauze in the lamp and cause it to smoke. That is a defect in the brooder and not of the earth, because the earth is a disinfectant and an ideal bedding material.

Mr. GRAHAM: Why should we not use earth that is slightly damp? Don't you think the conditions in the ordinary brooder are too dry?

A.—You would think so, reasoning from analogy, but I am not prepared to say whether it is of value or not.

Mr. GRAHAM: Wouldn't moisture be any good in the brooder?

A.—That is a subject for future experimental work.

Mr. BALDWIN: What do you use, cut clover or hay?

A.—Cut clover is the best material. For winter time, when you cannot get cut clover or hay, barnyard litter is all right, if clean and sweet. Little chicks are very subject to bowel derangement in the cold weather. If barnyard litter is used that contains decayed or mouldy particles it will cause trouble, and for that reason I do not use it.

A MEMBER: Did you have young chickens eating too much chaff?

A.—I know the difficulty with that is giving it to little chicks. I never use anything of that kind, because when I put the chicks in the brooder I want to raise them, and I take no chances.

Q.—Then you would not advise using that?

A.—It depends. Sometimes chicks will do all right on it, but you never know what a bunch of chickens are going to do, especially the first few days. In one of my former talks I brought up this matter. I have seen chicks deliberately eat the bedding, whether it is chaff or sand or material of that kind, and the result was very disastrous; and for that reason I have always used material for bedding which I was sure the chicks would not eat, or if they did eat it it was not injurious—cut straw, clover, or alfalfa.

A MEMBER: No litter with the paper?

A.—I use no litter in the warm weather, and in cold weather I use paper under the litter.

Q.—Would a rough, coarse wrapping paper act something like a blotting paper?

A.—Yes, that would be all right. We often take a piece of burlap and put it in to give them toe-hold with very young chicks.

Mr. TEBBS: Do you think there is a tendency after the first ten days to put the lamp out, if it is warm in the day time and light it up again at night?

A.—No; I do not think there is; but when you blow the lamp out you sometimes forget about it, and the chicks get cold. In the early spring it gets cold very suddenly, and if you are not there to light the lamp they get chilled. I do not think it does any good—that is, in the beginning. After they are a few weeks old they will stand any treatment.

A Member: Is it not better to run the temperature along the same degree all day?

A.—I never change the temperature with this type of brooder, running all the time at 105 degrees, and I never change it. Pin up the curtain, and as the chickens develop, open the curtain still higher; it does not require very much oil to heat.

What did you use for grit—sand or mica crystal?

A.—I used mica crystal. I have used oyster shell in a pinch; whether it is beneficial or not I do not know. It did not kill them.

Q.—Does sand kill young chickens?

A.—Fine sand will. I have seen a whole brood killed with it.

Q.—What is your idea about feeding little chickens once a day, just feeding them before they are ready to rest at night and during the day; giving them milk first thing in the morning, and half an apple and a little beef scrap in the afternoon, and giving them grain feed at night, with no grain feed in the day at all?

A.—I do not think the best method has been developed. At the present time there are hundreds of methods that are successful, and a great many that are not. Every one who raises poultry has a different way of feeding.

There is one thing to bear in mind in feeding young chickes, and that is the fact that the ability to select nourishing food from injurious or harmful substances does not develop so quickly in the brooder chick as those that associate with the hen. This instinct does not develop in the brooder chick until it is eight or ten days of age. The time, of course, varies with the strain and breed. The same chicks under a hen will be able to distinguish foods in two or three days. A bulletin describing these experiments has been issued by the Storrs, Conn., Experimental Station. The little chick seems to acquire this ability to know injurious or noxious substances from the hen. When the chick is placed direct from the incubator into the brooder it does not seem to have this ability, and shows a tendency to eat anything at all that it can swallow; it makes no difference what material is set before them—sawdust, chick feed, grit, beef scrap, salt or anything of that kind—they will eat indiscriminately, and, for that reason, I have never placed food before chicks continuously or allowed them to have access to food until they know what food is. Knowledge of this fact makes the matter of feeding little chicks very simple. Green food should not be neglected in the little chick's diet, and it must be provided in some shape or form, even if the chicks are upon a grass range. After May or June the grass becomes too tough for them to eat, and green food must be supplied in some manner. I usually feed very slightly at the beginning some commercial chick food or dry toasted bread that gives the nearest approach to zweiback.

Q.—What is zweiback?

A.—Twice baked bread or ordinary toasted bread. It is a preparation used for dyspeptics. At the start, with little chicks, it is desirable to put no strain upon the digestive organs, although later on stronger food should be used. They only acquire the ability to digest by giving the digestive organs something to do. At first feed carefully three or four times a day, keeping them growing, using care not to overfeed.

The way I discovered this selective food instinct in young chicks was by the use of chick grit. I usually put 5 per cent. of grit in the chick feed; the chicks would eat this grit the same as the food until about the eighth or ninth day, and after that time they would eat the grains and leave the grit. When that period is reached you can safely feed both grit and grain and scrap from the hopper, if you so choose.

A MEMBER: Do you ever hear of insurance companies objecting to people running an incubator in the dwelling house?

A.—There is not an insurance company in the United States that will insure a building with an incubator.

Mr. RICE: Except some of the co-operative companies.

Mr. GRAHAM: Last spring I had a little experience. I was running an incubator in the cellar under my house, and I was talking to the insurance agent, who said I would have to pay one-half more rate.

Mr. NIX: I have been running incubators for twenty-five years, and I have never had but one incubator in that time catch fire; but I do not operate incubators in my dwelling with the oil lamp. I have the incubator in the cellar now, but I have a gas connection.

Mr. ELFORD: If you had a brooder house 75 to 100 feet long and 16 feet wide, with cement floors and no internal fixture, how would you rig it up?

A.—I would want to know the time of the year to run it

Mr. ELFORD: About March.

Mr. NIX: I would recommend the use of individual lamp brooders, with wall coil and hot water heater, so that you could bring the temperature up in cold weather to 60 or 65 degrees in the brooder house, using individual lamp brooders to hover the chicks.

Mr. ELFORD: How do you like the cement floor?

A.—I think it is all right. It is something easy to clean and does not harbor lice or rats. There is this about the cement floor, you cannot allow the chickens to get in contact with it in cold weather; you should cover it with litter or straw.

Mr. ELFORD: How about a board floor?

A.—The trouble with a board floor is that if you get rats under the floor it is difficult to get rid of them.

Q.—How about the effect on the young chickens themselves?

A.—I do not think a board floor would be objectionable.

A MEMBER: Does not a cold floor cause leg weakness?

A.—I do not think so, if you have straw on it so that they cannot come in contact with the cement. You can get leg weakness from a very warm floor, but I would say the difficulty in winter is more apt to be in the feed, the method of overcoming that difficulty would be by changing the diet; add green food. In this case proper temperature conditions are assumed.

A MEMBER: Can you run these brooders with gas?

A.—Yes. A plant we have just fitted up in New Jersey has seventy-two of these brooders and operates them with gas, using an ordinary Argand gas burner.

A MEMBER: Is it a mantel burner?

A.—No, it is one of the oldest gas burners. It has a straight chimney, circular flame and adjusting valve in the burner. Use a mica chimney with this burner.

A MEMBER: They do not have any mantels?

A.—No. The air comes up through the center of the burner. This burner was designed for a reading lamp. I have seen that burner for over twenty-five years; it has been on the market ever since I can remember.

Q.—Do you have a pressure regulator attached to them for incubator purposes?

A.—For an incubator use, if the city pressure varies, you should use a low pressure regulator as protection. You can get them at from $4.50 to $5. A first-class low pressure regulator would cost about $9, and one regulator will answer for all the machines in use.

Mr. Baldwin: Have you seen anyone using acetylene gas?

A.—No, I have not. The only objection to acetylene gas is that the fumes from acetylene gas are very noxious, and injurious to animal life. I asked an acetylene expert in regard to the question whether it was advisable to use it in a brooder, and he said we would run a great risk in using acetylene gas for that purpose. You can attach that burner to 1905 Prairie State.

A Member: How much are those burners?

A.—The burners alone cost us about $3.50 a dozen, wholesale. Retail they cost more. The list price is $6 a dozen in the supply catalogues, with various discounts. They cost about a dollar retail, including the chimney, cock and burner—that means the whole thing complete to attach to the gas pipe.

Mr. Rice: What about that question of anaemia in chicks?

A.—Broadly, it means that the chick is low in vitality or has not reached full development, which is very common with winter chicks or chicks raised in confinement.

Mr. Graham: As you travel around the country, what percentage of chicks you see are anaemic?

A.—I would say, outside of a little bunch I saw in the corn field at the Guelph Station last August, 100 per cent. of them were afflicted with anaemia, more or less.

Mr. Graham: What is the cause?

A.—Any condition or surrounding that draws on the vital forces reducing the resisting power of the bird. Anaemia shows microscopically or chemically in the blood, and outwardly in the general appearance of the bird. This is a pathological condition with impoverished blood and deficient nutrition. Bad feeding, improper incubating and brooder conditions, poor housing, and insufficient or filthy runs—these conditions will all produce it; in fact, anything at all that will lower the vitality. For example, give a hen good eggs and the chicks which are hatched are of normal size, but with the same eggs put in some incubators the vitality will be slightly impaired, from the fact that the incubator does not reproduce all the conditions we find in nature. I have observed in my work this season that this matter of humidity has a great deal to do in the incubator in producing an anaemic chick. The greater degree of dryness present the greater the degree of evaporation of the egg. It becomes abnormal, and you get what we call an anaemic chick. Another way of producing an anaemic chick is with an incubator in which the ventilation is impaired; perhaps there is enough oxygen to keep the germ alive, but not enough for complete development. The embryo is retarded, and you get an anaemic chick. Anaemia shows in the appearance of the bird, the down is short and it has a small, thin, canary leg, and has a general broken-down appearance.

Mr. Baldwin: Have you made blood tests?

A.—It is a theory. I would rather talk to you on this subject next year, because at the present time we are going into the determination to see whether that is so or not. I do not know positively whether that is anaemia or not, but that is what it is called. If you take anaemic chicks where the conditions have been wrong in incubation, and you put them in a brooder, the chances are you will lose them. The same chicks, if not too anaemic, placed under a hen, will recover, and in the course of a few weeks will become normal. The best brooder that ever was made will not produce the conditions that we find in nature. The brooder cannot travel around and find tidbits for the little chicks. The motherly, watchful care is missing. It can only furnish heat and air. A good brooder and a careful operator,

when the round-up comes, will surpass the hen in general average. If you do not have sufficient ventilation in the brooder you get this same condition, and if the chicks do not die, they do poorly. You have seen those chickens with long heads and tail, pale face and dull eyes, and some do not grow any feathers. Improper feeding will also cause it. Closed tight brooders will do it even if the hover is all right. There are but few brooders that fulfill the conditions of successful rearing. Any practical brooder should be so made that the entire side can be opened to the outside air. A close brooder will almost invariably produce anaemia. Due care should be taken to secure fresh ground for runs. If you have a run in which the chickens travel over continuously, anaemia will develop from soil contamination. What this is I do not know. I do not think it is the bacteria, simply because you take this same chick and put them on virgin soil and a proper diet they will recover in a short time.

A Member: What is the cause of the excessive formation of a glutinous substance around the chicks in the egg before it hatches?

A.—I attribute that to improper development, the slowing up of the vital forces. The incubator brings the chick along apparently all right till when the period of exclusion comes. The time of exclusion is the critical time in the chick's life. If its vitality has been lowered during incubation you will find a thickening of the membranes, due to incomplete assimilation of the contents. The appearance of the unhatched chicks is what caused the belief of too much moisture. These chicks are wet, and the yolk is not absorbed, and the natural conclusion was that these eggs have too much moisture, and so the incubator was run dry the next time. The season was advancing, the eggs were stronger, and perhaps a better hatch was secured, and the next still better, and so we attribute it to the fact that the eggs were run dryer. I have come to the conclusion that moisture has very little to do with getting chicks out of the shells. There is not a vast amount of difference whether machines are operated wet or dry.

A Member: Can you tell by breaking the egg whether there was too much moisture or too little moisture used?

A.—I used to think so, but I do not now. The way I settled my mind in regard to this was, I set three incubators exactly under the same conditions, one dry, one with a moderate amount of moisture, and one with all I could give it, and I shuffled the eggs, and operated them myself, and was careful with them, and when the hatch was over there was less than one-half of 1 per cent. difference in the result, and to my mind I was satisfied that moisture had little or nothing to do with the exclusion of the chicks. I know there are a great many present who believe they can get better hatches along towards the latter part of the incubation if they will dip the eggs in hot water, and they use wet clothes and get those chickens out. I have never been able to do so.

Q.—Was there there any difference in those chickens in the mortality?

A.—I did not follow that out.

Mr. Baldwin: Was there any marked difference in the chickens as you took them from the incubator?

A.—There was.

Mr. Baldwin: In what way?

A.—To look at them there was a difference in the appearance and size, yet when you came to weigh them there is not very much difference in the weight. Where you get the maximum development you get the long down. I cannot explain that, but hen-hatched chickens have longer down than the chicken hatched in a dry incubator.

Mr. Graham: For the benefit of those who are here, there is a photograph downstairs of the wet and dry chickens, and you can see that the down on the wet chickens is longer than that on the dry.

Mr. Tebbs: What was your experience? Was it that those with the wet machines had the longer down?

A.—Yes; I think you will find that the chickens hatched in the wet machines have a better development, better blood and lymphatic circulation. They have better development all through, and the yolk is absorbed more quickly.

Mr. Baldwin: Did you think that the drier chicks have longer down afterwards? Do you think there is any machine that will hatch as many eggs as a hen will?

A.—No; I do not know. That is a matter of opinion. We have the result on these two sheets here. You can see the difference of a hen hatched egg and an incubator. I was here a few months ago, and saw how careful they were in making that record; they are not interested in any make of incubators. You will find the same results were obtained by Prof. Brown at Theale Reading, England. The figures are given in the annual report. The hens did better work on the average than the incubators by 10 per cent.

Mr. Baldwin: You insert the moisture by keeping sand in the pans and you keep them wet. What benefit is in using the sand?

A.—The use of the sand increases the evaporation.

Mr. Graham: I think it keeps the water from going bad. When you use a pan of water in it, it will get dry very suddenly. Using water in an incubator it goes dry quickly. Where you have the sand, even when the water is exhausted, the sand will not dry out at least for the next twenty-four hours.

Q.—The spilling, too?

A.—Yes, I used long pans, and was not troubled with its spilling.

Mr. Tebbs: Is there any advantage in using cotton wool instead of sand in the tray, apart from the advantage of weight?

A.—I do not see anything to be gained.

Mr. Tebbs: I mean in the tray. Instead of the sand put the moisture on the cotton wool.

A Member: You mean wet wools?

A.—Yes.

Mr. Nix: I have never used it. I have used linen cloths in one incubator. I did not want to use sand, so used a water tray, with an ordinary towel suspended, so that the ends would dip down into the water. The object in doing this was to get various degrees of moisture by using more or less cloth, thus control the evaporation under the eggs. I have hatched the finest chickens on the wet sand, and have never been able, with free ventilation, to drown the eggs in the shell with moisture.

ARTIFICIAL BROODING.

By C. A. Cyphers, Buffalo, N.Y.

I think the best thing I can do is to tell you something about our brooding methods at the Model Farm at East Aurora, of the brooders we have there, and how we operate at the present time. We have four brooding methods at the Model Farm, three of which we will work the whole year around, and the other one in the summer time only.

The one that comes nearest to the hot-house method is a long brooder four tiers high, heated with hot water pipes. We find we have to handle the chicks in this brooder entirely different from the other systems. Operators will need to keep in mind that no two brooding systems are likely to demand the same care. In other words, chickens cannot be housed under two or three distinct systems just alike.

In our nursery shelf brooder the shelves are eight feet wide and divided in the middle. On either side of the middle partition the hovers have been placed. The chicks are placed on the top shelf first, where the pens are divided into spaces 2x4 feet, and a wire screen keeps the chicks within eighteen inches of the hover for first three or four days. The hover has a temperature of 95 to 100 degrees. This temperature is the only principle common to all the brooders, whether we are running the indoor brooders, shelf brooders, or the old pipe system. The hover temperature is always kept at 95 to 100 for the first week. When the chick is first hatched the circulation is very weak, and it has little power of resistance, especially if the bird has not been well ripened in the incubator. If it is kept warm for another week the yolk will have entirely disappeared, and the chick will begin to make good growth, while if it was not kept at a high temperature for the first week it would surely die. In all brooding systems, and regardless of whether the chicks are well incubated or not, if the baby chick gets chilled during the first two weeks it is difficult to raise it. In the shelf brooder we leave the birds on the top shelf for the first week, and then lower to the next shelf. Here they remain for a week, when they are lowered to the third shelf, and then a week later to the bottom shelf. On the second shelf the spaces are four feet long, holding 100 chicks. On the third shelf they are twelve feet long, holding 300 chicks. On the fourth shelf, or bottom, they are twenty-four feet long, holding 600 chicks.

Mr. Baldwin: What space is between each tier?

A.—That house has a sixteen-inch space between each tier, and is not high enough. I shall rebuild the brooder in due course of time, probably making it only three tiers high.

The point to be gained in the construction of this brooder was to arrange it so that a man could care for the largest number of chicks. The longest time we now keep them on the shelves is four weeks. After that they do not do well, even when they are given a longer run. If kept on the shelves for six or seven weeks the feathers stand up like porcupine quills, and they are not a good sight to look at. For four weeks they stand up as strong and do as well as under any of our systems, unless it is the colony brooder, which is used later in the season and arranged so that the chicks can get out on the grass by the time they are two weeks old.

For winter work, when the birds in the shelf brooder are four weeks old we put them under our second brooding system. These houses are built twenty-five feet wide and 232 feet long, divided into two sections. The first section is 104 feet, and the second section 128 feet. The first section is kept warmer than the second, and receives the chicks when first taken from the shelf brooders. The house is half dormer top, the windows in the dormer facing east. We get splendid ventilation in this house, as we can open up these half dormer windows and get a circulation without a draught on the chicks. We never have any strong odor in this house at any time. The hovers are placed in the middle of the house, and are heated by a hot water system. Here the chicks continue to do well, and, in fact, we have put chickens under this system that were left on the shelves too long during our experimental work, and in two or three weeks they would begin to brighten

up, their feathers would smooth down, and they would begin to look like chickens again.

Mr. BALDWIN: What is the width of each pen in that brooder house?

A.—Eight-foot pens.

Mr. BALDWIN: What system of piping have you?

A.—Hot water pipes.

Mr. BALDWIN: How are they placed?

A.—They are placed beneath a three-foot walk in the middle of the house. The pipes that heat the hover in the nursery or 104-foot section consist of eight 1¼-inch pipes, divided into four flows and four returns. On one side of the hover, on a level with the top, is a three-inch flow, which supplies the heating coil under the hovers in the second section of the house, and the return comes back through a three-inch pipe placed on the opposite side of the hover, on a level with its top. The coil in the second section of the house is made up the same as that in the first section, but is supplied from a different heater. The three-inch flow and return pipes on either side of the hover are exposed to the general atmosphere of the room, are not covered over in any manner, and therefore help to keep up the general temperature, making the first section warmer than the second, which only has the hover heat.

Mr. BALDWIN: What do you use for the hover?

A.—A plain board hover made with matched boards battened together, over which the attendant walks. On the edges is tacked a strip of enameled cloth, such as is used in cheap carriage tops. This comes within three inches of the floor, and forms the sides.

Mr. BALDWIN: What is the space between the pipes and the floor?

A.—Twelve inches. This is higher than we would use for baby chicks when brooding entirely under a pipe system, but in this house the birds are four weeks old before they are put into it. It is what we call a second brooder.

Mr. BALDWIN: What is the temperature of the room?

A.—In the nursery end the general temperature of the room is 65 to 70 degrees; in the second section about 60 degrees. The hover has a temperature of 80 to 85 degrees.

Mr. BALDWIN: What system of ventilation have you to keep the air fresh?

A.—The side windows and top dormer windows. I have never found any system to work satisfactorily excepting the windows. These are full windows, placed eight feet apart on both the east and west sides. The top half is hinged and arranged to swing out. The dormer windows are half windows, and are hinged to swing out at the bottom.

Mr. BALDWIN: On a cold day, in order to keep your temperature up to 70, have you to keep the windows shut?

A.—No; the regulator keeps the temperature right, and we open the windows part way to get the necessary amount of ventilation to keep the air sweet.

Mr. BALDWIN: No matter what the temperature comes to?

A.—The regulator takes care of that.

Mr. BALDWIN: Will it close your windows?

A.—No, the regulator turns on more heat; that is, it opens the draught on the heater, which causes the water to flow through the heating pipes at a higher temperature. When the temperature gets up to the desired point the regulator acts and closes the draught on the heater. The draughts remain closed until the temperature goes down a fraction of a degree, when the draught is turned on again. It works automatically.

We have another house that has just been put up and filled. That house is sixteen feet wide and ninety feet long. I put it up to show visitors how they could arrange a small plant. This house contains eight of the Model Double Indoor Brooders. We get very good results in this house. The house is faced east. There is a twelve light 8x10 sash every five feet in the front or east side, and a similar sash every ten feet on the west side. The hallway or walk is on the west side, occupying about three feet of the space. The pens are divided into 5x12-foot sections, and the brooders arranged along the walk so that each half of the brooder is in a separate pen.

Mr. Baldwin: The building runs north and south?

A.—Yes, I put all my brooders up that way.

Mr. Baldwin: What is the advantage of having them north and south?

A.—It does not get so warm. With a house facing south one cannot control the heat during a warm day. We face it east and west and put the windows on both sides. The top half of the sash is hinged so as to swing out, and we can open the window slightly on either side and ventilate the building perfectly.

The general temperature of this house is kept up by two ordinary coal stoves. Instead of putting in an expensive hot water system we keep up the general temperature of this house with two ordinary coal stoves. We bought two second-hand parlor stoves of the sheet iron type, which cost us $10 each. We allowed a pen or a five-foot section for each of these stoves, and placed them in the fifth pen from either end.

We put in eighty birds on either side of the brooder, or 1,280 birds in the eight brooders. We keep the hover temperature in the brooder at 95 to 100 for the first week, and it is about 80 degrees on the floor in the nursery in front of the hover. The birds are kept in the brooder for five to six days, and after that they are let out in a small space 2x3 feet in front of the brooder, and kept confined there for a day or two, when we take the partition out and let them have the run of the 5x12 pen. Our object is to keep them confined near the heat until they learn to run in and out freely, and learn to go to the warmth when chilly. When we first let them out the man goes along and sees that they do not stay out too long.

The brooder I like the best for a capacity of about 5,000 birds is the combination house of shelf brooders heated with lamps and the hot water piping system. For fifty feet this house was built double. This portion of it is higher than the balance of the house, and has a half dormer top. On the west side there is a blank wall, with the exception of five half windows placed near the top plate. Against this blank wall we have a three-tier-high shelf brooder. We put the birds on the top shelf for a week, where fifty birds have a space 4x5 feet. They are then lowered to the second shelf, where 100 birds have a space 4x10 feet. The birds have the same space for the third week on the bottom shelf.

In front of the fifty-foot section, and extending on down through a sixteen-foot house is a 170-foot hot water system. This hover coil is made up of four flows and four returns of 1½-inch pipe. To keep the general temperature up in the house we use another coil, placed along the walk, made up of two flows and two returns. This only extends for 100 feet of the house. As it extends through the fifty-foot section, where the shelf brooders are, it keeps that end of the house warmest. After the birds are on the shelves for three weeks they are placed down on the floor under this pipe system, and are worked up toward the far end of the house from week to week on the days we clean. For a house of 5,000 capacity I do not believe there is a more

efficient house put up, or one in which the work can be done quicker and easier.

Mr. Elford: What kind of floors do you use in your brooder house?

A.—Board floors.

Q.—Is the cement floor bad for chickens?

A.—The cement floor is rather cold for baby chicks.

Q.—Would it be all right with a board floor on top of it?

A.—That would be double expense. There would be no other objection.

Mr. Baldwin: What about rats under the board floor?

A.—In putting in the board floor we do not leave the rats any place to stand on to gnaw, and we do not have much difficulty. We try to keep them off the place.

Q.—How long have you been on that place?

A.—Only since April, but on the place at Wayland we kept them off pretty well.

Mr. Baldwin: How do you keep them off?

A.—A rat terrier is a pretty good assistant. We use commercial sulphate of hydrogen, putting a little of it in their holes, and letting the dog kill them when they come out.

Q.—How high is your board floor from the ground?

A.—From eight inches to a foot. It depends on the contour of the land.

A Member: You cannot let a dog under the floor?

A.—Not very well. We put hemlock boards for eighteen inches in the ground around the sides, and they do not gnaw through that very much. In putting in the floor we are careful to arrange the joists so that the rats have nothing to stand on in order to gnaw through the floor, so that if they do get under the floor they do not get in the house.

Q.—Do you have any cases of white diarrhoea in the double brooder?

A.—No, we have practically none at all. We are careful not to let the chicks get chilled.

Mr. Elford: Is that individual brooder house of yours as good for rearing chicks for the first month, say, as the outdoor brooder?

A.—There is very little difference. They come as near to the outdoor brooder system as anything we have. At the time of year we could use outdoor brooders the chicks are out on the ground as early as they would be in the outdoor brooders.

A Member: How long do you advise keeping chicks in that double indoor brooder of yours?

A.—We keep the chicks in the brooder for five or six days. Then we let them out in a limited area for two or three days more, and then give them the run of the 5x12 pen. When using this house in the spring we let them out on the ground after they are two weeks old

Q.—Do they go off their feet?

A.—We have very little trouble with leg weakness, although it occasionally shows in winter work.

Mr. Baldwin: Have you any objection to earth floors?

A.—It is largely a question of labor. Through New Jersey, where they have plenty of sand, earth floors are used almost entirely. They clean twice a year, carrying out all the old sand, and bring in fresh, using it five or six inches deep. They rake it over from time to time with a fine-tooth rake, and have very good results

Q.—What d you keep on the board floor?

A.—Cut clover for the little chicks.

Q.—During the winter they have no access to the ground whatever?

A.—No, not until the weather breaks in the spring.

Mr. Elford: What runway did you say you had inside the brooder house for 160 chicks?

A.—There would not be 160 chicks together. The brooder is divided in the middle, and eighty chicks placed on either side, and each eighty chicks have a run 5x12 feet.

Mr. Elford: A four-foot passage at the back?

A.—About three feet two inches. We make the building sixteen feet wide over all.

A Member: Is there any advantage in the shelf brooder besides the economy in space?

A.—That is the principal economy. Still, when we get this shelf brooder worked out to a satisfactory finish I expect to make it possible for one man to care for twice as many chicks as under the other systems.

A Member: What depth of cut clover do you keep on the floor?

A.—Not over an inch.

Q.—Do you keep a full inch of cut clover?

A.—I would not say that, but in bedding down we scatter the cut clover in until the floor is thoroughly covered. In the winter time, when we have to keep them in the house for a long period, we bed a little heavier than we do in summer. The dry cracked fe d is thrown in the litter, and th chicks made to work for it. After the weather permits the chicks getting out on the ground we hopper-feed more and bed lighter.

Mr. Tebbs: In districts where it is almost impossible to obtain cut clover what do you advise?

A.—Cut hay is the next preference; cut straw the next.

A Member: What would you advise for the prevention of drooped wings?

A.—Scattering the feed in the litter so as to make them work more. More fresh air. With Leghorns the wings grow very rapidly, and we sometimes clip them.

Q.—What feed do you start the birds on?

A.—On grit. We generally take the hatch out of the machine in the afternoon of the day it cleans up, and when we put the chicks in the brooder we give them a dish of grit and a dish of water. This is all they get until the next morning.

Q.—How soon do you give them beef scrap, and do you feed in the litter from the first day?

A.—Yes, we scatter cracked grain feed in the litter practically from the first. In feeding beef scrap, that is put in a dish or a hopper. In winter we usually give them a feed of it in a dish once a day.

Q.—Do you think beef scrap will put them off their feet?

A.—No, not if too much is not given and they have enough fresh air. It is largely a question of fresh air and exercise with it. Breeders have the most difficulty with leg weakness in the winter time. They do not give them enough fresh air. We try to keep the air in our brooder houses as sweet as it is in a living room. That fresh air with ample warmth is the chief feature in raising chickens is my experience.

Q.—Why do you prefer cut clover?

A.—When we bed with cut clover the chicks eat the leaves, the blooms, and the seed, and do well on it. Clover has a tonic or medicinal property outside of its food value.

Q.—How do you operate the colony brooder?

A.—This brooder is divided into two compartments, the nursery and scratching room. The hover is in the nursery. We put in from 80 to 100 chickens. They are kept in the nursery end for six to seven days, even during warm weather. If the weather is warm we open the door a trifle. We would rather open the door than turn the heating lamp out entirely. We keep them in the nursery for six or seven days, until they get well started, and then let them out in the exercising end of the brooder. After they are let out in the exercising part of the brooder we open the glass door a trifle, so as to give them more and more fresh air, and by the time they are two weeks old we let them out on the ground. We use a small shelter with the brooder, which is 3x6 feet, and we keep them confined to that shelter for ten days to two weeks longer, so that the birds are practically a month old before they get out on a larger run. On the run we put four to six brooders in one yard, placing them about fifteen feet apart. Around these we put a two-foot fence. This is to keep the chicks within bounds, so that if a shower comes up we can get them in the brooders quickly.

In feeding them in the colony brooder we throw the chick food into the litter in the nursery end, and also put in a galvanized iron feed hopper, in which we have beef scrap, chick food, and grit. We feed that way for the two weeks they are confined to the brooder. When they are let out in the chick shelter we feed entirely from the hopper. When they are a month old we give them nothing but cracked corn and beef scrap in the hopper, but begin to feed one mash feed a day. The mash feed pushes them along a little faster, and we get the cockerels to broiler size quickly, and the pullets make good growth. The pullets that are hatched from March until June are mash fed, as well as hopper fed, right up to laying maturity. The pullets hatched in January or February are checked in June by giving a hopper of bran only, and we hold them on this bran diet for a month or six weeks. The bran is fed in a hopper. Along in August we begin to hopper feed again of mixed grains, and by the middle of September we begin to get eggs. The very late-hatched birds we crowd with mash feed, so as to get them laying by December. Our March and April-hatched birds come into laying maturity as a rule in October.

Mr. Baldwin: There is a general impression here that pipe brooders have been a complete failure. What is your criticism about the installation of pipe brooders?

A.—It is in the installation. It is rather difficult to arrange a pipe heating system so that the chicks get enough ventilation under the hover, and at the same time have a hover temperature of 95 to 100 degrees.

Q.—How can you secure the necessary ventilation under the hover?

A.—In the Model brooder we have a forced ventilation. We can confine the chicks until we give them a secondary incubation and get them well started. While thus confined, the forced ventilation keeps the air around them pure. Under the pipe brooder it is difficult to get a high temperature and at the same time get enough ventilation.

A Member: Do you advise feeding the chicks out of a hopper when they are a week old?

A.—That depends on the conditions. When brooding them so that we are sure of getting them out on the ground by the time they are two weeks old we use the hopper feeding principally after they are a week old. When raising the chicks indoors in the winter they will go off their feet in four to six weeks when hopper fed.

Mr. Baldwin: Do they go off their feet with the hopper feeding if they are off the board floor?

A.—It makes little difference if they are confined indoors. If they can be gotten out of doors when they are two weeks old they will stand almost any kind of feeding.

A MEMBER: Do you give the chicks all the water they want from the first day?

A.—As a rule, yes.

Mr. ELFORD: How is skim milk for small chickens?

A.—We are feeding some this year. I have not made up my mind that it is a good thing.

Q.—They can get along as well with the water?

A.—They always have in the past.

Mr. BALDWIN: Do you object to the practice of taking a chick that is a little older and placing it among the newly-hatched as an object lesson to the chicks?

A.—I do not think there is any necessity for it. There are always some chicks that are brighter than others, which will begin eating and scratching from the first.

Q.—Have you any trouble with chicks dying by eating sand?

A.—No. I have seen chicks that died that had considerable sand in the crop, but I think it was because of indigestion, and the chicks ate the sand to relieve it.

Q.—Do you feed any vegetable food, or do you depend upon the clover feed from the first?

A.—After the first week we like to give some vegetable, and we do when we have it. We have raised good chicks without any vegetable other than the clover, but at the same time I think some vegetable food a good thing, and I was very much interested in the sprouting machine downstairs. I think there is a great deal of value in some sort of succulent green food.

Mr. BALDWIN: How many times a day do you feed the chickens?

A.—In the indoor brooders we scatter food in the litter three or four times a day. When the chicks can be gotten out of doors we keep feed in the hoppers. After the birds are old enough to get along without heat we put them out in colony houses on grass runs and give them a hopper of cracked corn and beef scrap and a dish of water. This year we shall feed some of the birds on range half wheat and half cracked corn.

Mr. RICE: From what age is that?

A.—That depends on the weather and how soon they can get along without heat. Sometimes it is eight weeks, sometimes twelve.

Q.—Wouldn't skim milk take the place of beef scrap for chickens and be more easily digested?

A.—I presume it would; but there is something I don't like about skim milk, and that is the condition in which it leaves the chick. It is hard to make me believe that a chick is comfortable and doing well when it is stuck up and the down and feathers are plastered close to the body. It also increases the work to feed skim milk.

A MEMBER: Do you think twice a day is enough to feed young chicks?

A.—We always have some feed left in the litter—that is, we do not leave them to eat it out perfectly clean. Whenever we throw it in the litter it causes renewed activity. Otherwise one feeding a day would answer if there is enough thrown in the litter to last them all day.

Mr. BALDWIN: Are you troubled with chicks getting into the habit of pulling each other's legs?

A.—They do to some extent when in close confinement. In the spring we had a lot of White Leghorns in one of the shelf brooders in the experi-

mental room. Some of them weighed as much as a pound and a half, when they finally got restless with the close confinement, and they literally ate the breasts off some of them. They were then about twelve weeks old.

Mr. BALDWIN: For a couple of weeks I was badly troubled with them, and then they stopped. I don't know what caused it.

A.—One starts picking at another, and starts a drop of blood, and after they get a taste of the blood they keep picking.

Mr. TEBBS: I have seen them a few days old start at each other.

A MEMBER: Do you feed sweet or sour milk?

A.—We have fed both sweet and sour. We feed sour milk to harden the bones to prevent leg weakness.

A MEMBER: If you were building a small plant, which would you prefer, individual outdoor brooders or individual indoor brooders?

A.—It depends on when you want to get to work. For work up to the middle of March I would use the indoor brooders. After that I would always prefer the colony brooders. The birds do better out on fresh ground and green grass, although the first lot of birds out on the fresh yards do practically as well.

A MEMBER: What would be the trouble with some apparently good, sound ducks in October, well fed with green vegetables and grain, and pastured in an orchard, when in October they began to get off their legs and die.

Mr. BALDWIN: Were they very fat?

A.—Not extra fat.

Mr. CYPHERS: Did they not get at a dead animal? It would look to me like ptomaine poisoning. When a chick or a duck eats putrid meat it causes ptomaine poisoning. I have seen domestic ducks put on salt marshes eat the snail and little fish that have been left in the sun by the tide. They lose the power of the muscles in the neck and wings, and get what is commonly known as limber neck, which is the direct effect of ptomaine poisoning.

Mr. GRAHAM: We often find that where we shelter the ducks to get them to grow as fast as possible they get off their feet.

A.—They need more fresh air.

Mr. GRAHAM: When we have them outdoors the only way I seem to get at the difficulty is to give them more exercise.

A.—The principal thing is fresh air and cool shade. Under these conditions I have fed a ration that has produced a five-pound duck in seven weeks.

Mr. GRAHAM: That is your Model duck ration?

A.—Yes. The birds would get heavy on their legs, but they would not break down so that they couldn't walk.

Mr. GRAHAM: You wouldn't want to recommend a duck fed in that way as a breeder? Would you not want to grow them slower?

A.—In picking out breeding ducks I like to make three selections. We select good birds from the flock when they are eight weeks old, and forcing up to that time will not hurt them. When they are twelve to fourteen weeks old, and have got their second coat of feathers, but are still soft enough to market as ducklings, we go over them again and pick out the birds for market that have not developed as well as they should. When they are ready for the breeding pens we cull again, taking out the undesirable birds.

Mr. GRAHAM: In the selection of your breeding ducks do you pay any attention to the development of the keel?

A.—Yes, but we get more breast meat on the short, broad duck than on the long one.

Mr. GRAHAM: You want a short, broad duck rather than a long, narrow duck?

A.—No; a long, broad duck is the one we get the most money out of. It will weigh the most, and grow the quickest.

Mr. GRAHAM: Will a short, broad duck mature more quickly than a long, broad duck?

A.—The smaller the duck the quicker it will mature.

Q.—Which would pay the best, from a commercial standpoint?

A.—There is more money in the big duck. The difference in the maturity is only a matter of a few days, as we can get a five to six-pound duck into market at nine to ten weeks.

Mr. GRAHAM: How would it do to cross Indian Runner ducks with Pekin drakes?

A.—I do not want a cross breed of any kind on my place.

Mr. GRAHAM: The only duck you use or would advise is the Pekin for market purposes?

A.—At the present time the large Pekin duck is the most profitable one. Still, the market is calling for smaller birds all the time, and the market for the larger specimens, either ducks or roasting chickens, is more limited.

Mr. GRAHAM: Do you find that in your market a five-pound chicken is more popular than a six or seven-pound chicken?

A.—The hotels are calling for a four-pound chicken, and to supply this trade I am trying a flock of Rhode Island Reds. In many of the hotels they serve their customer with either half a chicken or half a duck, and they want a four-pound bird for this purpose. If they have a six or seven-pound duck they have to quarter it, and when served to two people at one table it is not always satisfactory.

Q.—Does not that apply to the private trade as well—that a seven-pound chicken is too large for a meal?

A.—The average family wants a five or six-pound bird, and there are many families that are satisfied with a four-pound bird.

Q.—We, as breeders, should endeavor to develop a plump, four-pound chicken?

A.—I would rather grow an eight-pound bird, but it is the question of selling them. The market can be glutted with large birds, but up to the limits of the market, I prefer to grow the heavy bird.

Mr. GRAHAM: I wonder if the smaller hens are not the best layers?

A.—As a rule they probably are. Many times a stunted bird is a better layer than one that is well developed, but such a bird should not be used for a breeder. I had one flock of seventy Barred Rocks that were hatched the 28th day of May. They were confined to the brooder longer than they should have been, on account of neighboring cats, and after they were let out were confined to a very small yard. The seventy of them were put into one small colony coop, where they crowded at night. They began to lay early, and laid strong all winter, but they were stunted birds, and were small.

Q.—How much grit do you feed young ducks?

A.—We only give them shell in a hopper.

Q.—Do you give them shell in preference to ordinary mica grit?

A.—Yes. In feeding young ducks we give them a hopper of cracked corn and whole wheat after they are a few days old, and a hopper of shell. The little fellows get hungry between meals. When he gets through with his mash feed his crop is sticking out like a walnut, but inside of two hours he is lean and hungry again, and they burrow and work around in the bedding and worry for something to eat. When they have the hopper of grain

they will go to it and pick up a few crumbs, take a drink of water, and go back and pick up a few more kernels, and keep more contented until the next feeding.

Mr. Baldwin: I wish to thank Mr. Cyphers for his speech. The chief suggestion that struck me was the idea in the pipe system of brooding. Mr. Cyphers practically admits that it is not useful for the baby chicks. It can be made of practical use when the chicks are beyond the age of the nursery. The other idea was that in the pipe brooder house the plan of having the buildings running north and south rather than east and west. We know that there is real difficulty, especially in the middle of the day, that the heat is hard to control in the brooder house, which encourages the young chicks to bunch up outside of the brooder. Having the brooder house running north and south, we have the sun from the east to brighten the chicks in the morning, and shade from the roof in the middle of the day, an they get another touch of sunlight from the west in the afternoon. That is what we should all remember, and is worth practising.

VITALITY IN HATCHING, REARING, AND THE PRODUCTION OF EGGS.

By J. L. Nix, Homer City, Pa.

I have listened with a great deal of interest to President Creelman's remarks in regard to the work of the Ontario Agriculure College. Canada should be proud of the opportunities it gives the young people of the Province of Ontario to fit themselves for their life work. While you may consider this College a local institution, the influence extends beyond the confines of Ontario. Your smallest department, the Poultry Station, is known by breeders and growers of poultry from one end of the country to the other. Hundreds of poultrymen in the United States are watching your poultry work, and the new and improved methods that are being introduced. It has become a clearing house of practical information that has a money value which is difficult to enumerate in dollars and cents. I noticed in President Creelman's remarks the money that was appropriated for dairying—I think it was $45,000; but I do not remember him stating how much was appropriated in the poultry work or how important it is in the Province of Ontario. In the States our poultry industry is worth as much to us as the cattle or dairy industry, and there are thousands of dollars appropriated by the Government to dairying and very little money appropriated to the poultry industry. It may be that we do not realize the importance of this industry. It may be from the fact that no one is sufficiently interested in it: a chicken is so little and insignificant. Yet statistics show that the annual production of poultry and eggs in the United States amounts to over $500,000,000. That does not include what is used in the homes of the producers, only the surplus marketed. If it was all included, it would amount to $600,000,000 or $700,000,000. When you consider that everyone is interested in poultry, more or less, and even with the improved methods and appliances the prices are increasing from year to year, in spite of the developments made to keep up with the demand in the way of artificial production, it should be one of the objects of this meeting to find better and more scientific methods to increase the value of poultry products and do it intelligently. I do not think we realize the value of the work that is being done at this station. You may to-morrow, when you hear Prof. Day, have

the opportunity of becoming more familiar with the experimental work. The object of that work is to increase the efficiency of labor in feeding, care, housing of fowls and the improving the methods of hatching and rearing. The scientific side of incubation is being carefully investigated. Artificial incubation is not an exact science. There is much to learn. The first exact work on natural laws in incubation has been done at this Station.

Mr. Graham asked me to talk upon "Vitality in Hatching and Rearing, and the Production of Eggs," with this point in view. In any kind of poultry production the whole matter revolves around vitality. If you have good, strong eggs you can hatch them with almost any appliance. If the eggs are weak the task becomes more difficult. Vitality is like a chain of a great many links, if one of these links is weak, the result which you attain with poultry will be as great as the weakest link. If anything in your method is at fault—feeding, hatching or rearing—your efforts will be futile, and the results will be a disappointment. Any one can take a pencil and a piece of paper and figure a profit in the poultry business, because we know the market price and the cost of production and what our buildings would cost, and, it looks very profitable; but, when we get into it, our figures do not always hold out. Why? Because our chicks die. In some stage of the game there is a faulty link. We have failed to keep up the vitality; the chicks die, and our best efforts may end in loss.

Vitality will be discussed at this Institute in very many different lights. As the subject of feeding has been taken up I will not discuss that to-night, but will merely say that, so far as my observation goes, the dry method of feeding has done more to preserve vitality than the wet method. It seems to be easier to obtain vitality and keep it because the birds are never forced. Any manner of forcing egg production will be at a loss of vitality. I do not know as it is necessary to take up incubation. It is a very essential point in incubation to have eggs of high vitality. To get those eggs, is a matter of housing, feeding or mating or, in other words, the influence of environment has much to do with results.

If you have a strong egg, then try and retain all the vitality you can by the use of those hatching methods that nearest approach nature. Naturally the hen builds her nest on the ground. To obtain one hundred per cent. of vitality, a hen in which the natural instinct is fully developed must be used. We have tried to civilize them, and they have lost a great many natural characteristics, so that but few hens have the hatching instinct fully developed. We find that a good incubator will average as well as the average hen, but when we get to the day when the incubator has the hatching power of the best hen, we will be past many of our present troubles.

We also have the matter of brooding to contend with. So many have failed with the brooder. To retain vitality of the hatched chick we must have a brooder built on correct lines, properly ventilated, and maintaining a uniform and constant temperature. The runs must be cleaned and littered in a certain way.

A hen, if not interfered with, will raise chickens only in the spring or during the natural incubating season, but artificially we raise them out of season in the dead of winter or very early in the spring, when the eggs have a natural tendency to be weak or infertile. A brooder is an inanimate machine; it can only supply heat and keep the chicks comfortable, and the little chicks seem to miss the fostering care of the old hen and the many little tid-bits that they would secure on the open range are missing. Naturally a hen would only have a small flock, nine to fifteen, while we in

brooders, for a matter of convenience, attempt to raise them in large flocks, which only increases the difficulties. For this reason, in rearing chicks artificially a great deal more care in feeding is required to raise them successfully and to retain a sufficient vitality so that the chicks will develop normally and rapidly.

Another method of preserving vitality is in proper housing. Prof. Rice is to discuss the housing problem, so I will not say anything on that subject. It has a great deal to do in sustaining the vitality of the breeding stock and consequently the vitality of the young chicks. Closed tight and damp, frosty houses will destroy what little vitality the birds may have.

There are two systems in use in rearing poultry, known as the intensive and extensive systems. The extensive is commonly called the colony system. I have visited hundreds of poultry plants, successful and unsuccessful, and have seen the various systems in practical every day use. More failures have occured upon the intensive plan than any other. They seem to succeed for a year or so and then fail. Upon this plan the birds are crowded so as to save labor in caring for them, with the result that the soil becomes contaminated, the birds become diseased, and the plant is soon a thing of the past; while on those farms where the colony system is used the breeding birds are spread out, the young chicks are on fresh, clean soil, given unlimited range, housed in small flocks and it is rare indeed for a plant of this kind to fail.

Another feature that has worked to the great injury of the poultry industry has been the successful business man who has made thousands of dollars in business and manufac uring or selling. When he sees the difference between the cost of producing poultry and the selling price, he naturally presumes that his superior business training and methods if introduced in the produc ion of poultry upon a large scale, would be a highly profitable undertaking, and the result is that thousands of dollars are lost by men of this kind going into the business without experience or practical knowledge, and the country is full of abandoned poultry plants of this kind. We visited a plant of this kind only a few weeks ago, where an expert railway man had spent $60,000 upon a farm. With a great deal of pride, he showed me his poultry houses. They were well built, lined and ceiled as tight as a drum. There was not a ventilator in the building: no provision had been made for ventilation, and scarcely any for light. The frost was hanging upon the ceiling and walls in long festoons. This was the beginning of another failure, unless the entire plant is radically changed. Many plants are almost a success, and they will eventually succeed.

As an example, there is a Leghorn farm in New Jerey. They have no difficulty in caring for the old birds and producing large numbers of eggs. They sold something like 140,000 eggs for hatching purposes last season, besides what they used themselves. They have had great difficulty in starting their young chicks, and the trouble has been in their system of brooding. The coming season they will use the individual lamp brooder in place of the hot water heater and pipe system and, try again.

One of the successful plan's that could be named is the Lakewood Farm at Lakewood, N.J. This plant was fully described by Mr. Hunter at last year's Institute. The Lakewood chicks are started in individual lamp brooders in long brood houses, and are then transferred to colony houses on the open range. Birds are grown upon the open range and brought into the winter laying houses in the fall with a maximum amount of vitality.

We would warn you against attempting to keep up your breeding stock by using eggs from birds that have been forced for winter egg yield. You

run great risk in hatching and rearing chicks from these birds on account of the loss in vitality. You might succeed for a few seasons in hatching eggs from hens in confinement, but, eventually, there would be such a loss of stamina that the business would be endangered. Vitality must be kept up from beginning to end. We all agree that the maximum vitality is secured by keeping the breeding birds always on an unlimited range in small flocks. I think there is a reason for this.

The ordinary barn fowl partakes more of the pheasant nature than does any other bird that I could name. They are a ground bird, used to roosting in low shrubbery. Pheasants in the winter time will be found resting in low spruce bows, getting off the ground five or six feet, just out of reach of foxes and in a sheltered place, preferably a narrow ravine where the wind cannot find them. When the barnyard fowl is surrounded by similar fresh air conditions they never seem to suffer from the cold. As long as they have plenty to eat, and are protected from winter storms and rain, they retain their vitality. This shows from the fact that the combs do not freeze, and the eggs from such stock are highly fertilized and very strong.

The permanent colony house is not as good as the portable. The portable house is usually built upon runners similar to the common stone boat. In the spring and summer time they are drawn upon the range, and in the winter time may be brought up near the feed house and arranged in rows, so that it is almost as easy to care for the birds as if they were in a single continuous house. The colony house system is in general use in England, and is practically the only system employed. The colony houses have wheels at each corner. The houses do not have any floors, and are drawn to a fresh plot of ground every few days. I would advise those who contemplate going into the poultry business, no matter on what scale, to start with the colony system. If you wish to use the intensive system, use it afterwards when you get familiar with handling birds on a colony house plan. It takes a little more work, but it is best in the end, and the chances of success are much greater than where the other plans are followed.

A typical colony system is in use upon the Tillingast plant at Vernon, Conn. These houses are fitted with food hoppers and filled once a week. They are only cleaned on the average once a year. The labor cost is reduced to the minimum, and eggs can be produced upon this plant at a cost of 7 to 9 cents a dozen. Upon the intensive egg farm where all feeds are supplied and the birds are confined, the cost of egg production runs from 12 to 16 cents per dozen, while on the ordinary farm where the chickens pick up a large amount of their food, the eggs can be produced for from 4 to 6 cents a dozen. The intensive plant always has to meet this competition, and can only succeed where they have a special market. Any farmer can materially increase his production by the use of a few colony houses with scarcely any increase of labor cost, and the use of an incubator or two and a few brooders will prove highly profitable. The best birds are produced upon the farms where they have practically an unlimited range, and for that reason I would recommend any and all who raise poultry to give the portable colony house careful consideration.

Q.—What about the corn field chickens?

A.—Last August while at Guelph, Mr. Graham took me out into the centre of a thirty-acre corn field where there were some chickens that did not have feathers enough to cover them, they were growing so fast. (Laughter) These were grown under as natural conditions as it is possible for us to get, and at five weeks of age were as large as the usual chicks are at eight or nine weeks of age. Putting little chicks on the grass range is

not always best if it is ranged over by larger chicks. The little chicks do best upon virgin soil, ground that has not been ranged over by other birds, and that is where the advantage of the colony system comes in. The only drawback to the colony system is in those locations where they have wild animals; but where there are no foxes or skunks, to carry off the birds there is no better way of raising them than by placing the colony houses along the turn rows or edges of the cultivated fields.

Q.—What size of colony house do you recommend?

A.—For rearing young chicks we like a colony house about 6 x 8 ft. If the colony house is to be used in winter time for layers, 8 x 12 ft. in size would be better.

Raising birds for market and raising breeding stock are entirely different propositions. For breeding stock where you desire to get the fullest development you cannot crowd, while the same birds if intended for market, two or three times as many could be put together.

Q.—Do you prefer the open front house?

Any properly constructed colony house is practically an open front house when the windows and doors are open. The openings in the door and the window should be hinged at the top, opening out from the bottom to keep out the rain during storms. It is very desirable to have the houses so arranged that the attendant will not have to look after them during sudden showers and storms. Colony houses can be constructed after a great many plans and still be practical. Plans are modified to suit the locality and climate or soil.

Q.—What is a good treatment for a chicken until it is about ten days old?

A.—There are a hundred different ways of feeding a chicken that are entirely satisfactory, and there is no one way to feed a little chick. Do not have anything around the chick that it will eat that will injure it. Clover hay and alfalfa make good litter, but I would not use fine sand. Still, I have seen hundreds of them raised on sand, and I have seen chickens eat sand and never get over it.

One thing you should bear in mind, and that is, the first few days you have to be particular to have the temperature right. The chick as it comes from the incubator, while it is out of the shell, is not completely incubated until about four days afterwards, till the yolk is absorbed. You find naturally the hen stays very close to the chick for a few days after it comes from the egg, and it is necessary to have these conditions in a brooder. The runs around the hover should be very small the first few days. They require very little nourishment until the yolk is absorbed. We use bread crumbs, but you should not feed too much.

My method of determining the amount of food the chick should have is by watching the crop. That should not be distended at any time: when too much food is placed before them they will over eat. If the chick is good and strong, it might pull through but the weak ones will succumb. As a general rule you have to use a good deal of precaution the first few days. I commenced to use beef scrap from the very first, but in very small quantities. I used the ordinary chick foods. The standard varieties of chick foods on the market are entirely satisfactory. The great danger in using cheap commercial foods is getting chick feed that contain weed seeds. That is especially true of chick feeds that come from the west. They contain not only weed seeds, but seeds that have become musty, and seeds of that kind will produce disastrous results. You can make a very good chick food of meal and cracked corn, and cracked wheat in equal parts, sifted.

and with it use 10 per cent. of meat scrap and 5 per cent. of grit. The chickens require no more than that, except green food. They must have green food. They cannot eat tough grass. If you put them in a corn field they will find something there that is all right. I do not know whether it is animal life or those soft succulent plants that grow up between the corn, but there is something that has a wonderful effect on the chicks. If you hatch good chicks and feed them properly you ought not to have any difficulty in raising all of them. If you fail, take the Guelph Short Course and learn how.

The CHAIRMAN: We are very pleased indeed to have Mr. Nix give us this talk. There is a great point in the vigor and vitality of our flock, and Mr. Nix has spoken of the ease and ability by which one man can figure out on paper, that which does not work out in practice. I am not quite sure what he means by "intensive system."

Mr. NIX: What I mean by the intensive plan is, where birds are housed in long buildings and confined in closed yards, such as the ordinary commercial plant in the United States. With the colony plan no inclosures are used.

The CHAIRMAN: I think we want to bear in mind that the poultry work is truly best adapted as one of the branches that a man may carry on in connection with farm work.

Mr. Elford is going to speak to us. We have missed him from his general work over the whole Dominion, as part of the Dominion Poultry Department at Ottawa. He is now engaged in that very interesting work that is being carried on in Ste. Anne de Bellevue, where he has charge of the Poultry work. We would like to hear him tell us something about the work there."

POULTRY WORK AT MACDONALD COLLEGE.

By F. C. ELFORD, STE. ANNE DE BELLEVUE, QUE.

This is the first poultry meeting of any description that I have been at, since I was at one a year ago, so you would think I am pretty rusty. I have not been doing anything at poultry this year; I have been driving dagoes; but I am very glad to get back to poultry again. I do enjoy a good poultry meeting, and I do enjoy working with poultry. As the Chairman says, I have charge of the Poultry department at the Macdonald College. The fact of the matter is, we have not much of a department there yet to have charge of. You all know we are just in our infancy down there. Buildings are being built, and we expect at some time in the near future, probably next year, to have something there that is worth looking at.

I want to say a word of two about the poultry work at Macdonald College. Mr. Nix was telling us something about the colony house system. I want to say that I am glad we are orthodox; we are following Mr. Nix's advice, and have started with colony houses. I might say we did not intend to start with a colony house, but we had to do it, as the buildings are so far behind. I think it has been a good lesson for us, and I think more now of the colony house than I did before. When we are putting up the colony houses, which we only intended to be temporary till we get up our other houses, the people would come from over the country and say, "I suppose this is only temporary?" I would tell them that we did not intend to keep

them here all winter, we only expected to keep them till the other houses were ready. They have been in there all winter, and they are likely to be there longer.

I want to tell you just how our poultry are doing in their houses. We have three different sized houses. One size is 14 x 20 with a 6½ foot studding, and a double roof with a straw loft. The other one is 10 x 20, arranged the same way, only it is six inches lower down; that is, the ceiling is six inches lower down. Both of these houses contain fifty hens, so you can figure out the square foot per hen. We are not orthodox there, according to the old rules that poultry men have laid down. We are not giving hens sufficient floor space. We have some smaller houses, 8 x 12 feet, to accomodate twenty five hens. These houses are built very simply. They are built of one ply of board, tongued and grooved, with the exception that at one end, where we have the roosting quarters, we have an extra ply of board. That is all the covering these hens require, and the temperature there goes down considerable lower than it does in Guelph. We have had it there twenty-eight to thirty degrees outside the house, and it has been eighteen below zero for some time. We have had it now at ten degreees below zero for several days at a time.

The fowls that we have in there are all pullets—last year pullets. We have only two hundred and fifty: one hundred Wyandottes, one hundred Barred Rocks, twenty-five Buff Orpingtons, and twenty-five Rhode Island Reds. That is the entire flock we have.

Along about the first of September, after these pullets had been moved around three or four or five times, they started laying, and they have kept it up fairly well until about the middle of December, when they laid a great deal better, and when I left there a week ago, we were getting a hundred eggs a day, sometimes a little less, from two hundred and fifty hens; and although the temperature in those houses went down to eighteen degrees below zero, they have very seldom failed in production of eggs. Probable the third day after an extra cold snap they would go down, may be a dozen, but the chief reason for the falling off of the egg production was on account of one breed—I will not mention the name—but that breed went down when the mild weather came while the other breeds went up.

I do believe we are practising the fresh air treatment with a vengeance. There has not been a day when the doors and windows have not been opened, and I have never yet seen his year a flock of hens that are as healthy as they are. We have not had one sick. We had three or four die, two from being a little too fat; they were not laying. Three also died because they hung themselves in a trap nest.

Just a word or two about what we intend to do. We are trap-nesting all the pullets at the present time. We intend to trap-nest every hen that we have on the place. Our idea is to build up a laying strain, at the same time not to lose the utility or the table properties of the fowl. We intend, of course, to breed from the best every year by the system of selection with the trap-nests, and also from appearances. We want to keep our flock up to a good table appearance, at the same time we want the egg production. I have another reason why I like these colony houses for an institution of this kind. People come out here and talking to Mr. Graham, and, looking at his office and at the general appearance of the buildings, and they take it all in as a whole, and they go home and say "Yes, it is all very good for an Institution with that amount of money, but we cannot put up such buildings as that." Then Mr. Graham will take them to his small house and that is where they will get the lesson. Our idea at Ste. Anne is that when the

farmers come to gain information, not to take them only to the large buildings but to show them the small buildings. We are going to have a splendidly equipped plant, over and above the colony houses; but we want to take the farmers to the colony house and say: "There is a little house that you can put up for very little money: that keeps fifty hens, and it has netted us so much money." That is something they can put into practice, and that is something which appeals to them. We want to be in a position that each boy or each two or three boys, as the case may be, can have one of these colony houses for his very own while he is at the college. He is in charge of that house and he has to pay by check for all the food he gets for the house, and he receives credit for what he gets out of it, and if he does that while he is here he is more likely to do it at home than if he just listened to lectures.

I cannot begin to tell you what Macdonald College is going to do. It is a tobacco man who is building the College, but I do not want you to think that because Sir William MacDonald is building the College that it is going to go up in smoke. It is built of stone and steel and cement, and is a very substantial affair. I am not going to compare it with Macdonald Institute. We take a great many lessons from Guelph, and we want to be men enough to own up that we owe it to Guelph.

SCIENCE IN INCUBATION.

By W. H. Day, O.A.C., Guelph.

I want to say at the outset that I am not a poultry man in the proper acceptation of the term. I think I am becoming one more and more every day. Until last spring I was not closely in touch with the poultry work. I was aware that there were some problems in the poultry industry that required some investigation—some physical problems. If there was one thing that I learned during my course at Toronto University, it was to have a love for investigation, and that has stayed with me. One of the fears I had when I came to this institution was that I might not be able to carry on as many investigations as I would like. That was a false impression, due to my ignorance of the work here. Last spring when Mr. Graham invited me to co-operate with him in the investigation of some of the physical problems lying at the basis of incubation, I was very much delighted, indeed, because it was giving me a chance on investigations which I had learned to love.

It seems to me there are several factors in successful incubation; more perhaps than we have been accustomed to believe heretofore. Until recently, we have looked upon the question of temperature as the leading if not the only factor. It no doubt is important, and I think it has been pretty thoroughly solved. Besides proper temperature, however, evaporation is coming into notice as a factor and evaporation must bring in the question of humidity.

CO_2, by which we mean the carbon dioxide of the air, has been investigated to some extent. You know that the air we have taken in pure and fresh is breathed out impure. The air as we take it in is ready to support life or combustion, but as it is breathed out it is foul, and will not support life, and, moreover, it will not support combustion. Now let me tell you of an experiment that you can all perform for yourselves. Take a little bottle like the one I have here and put a candle in it. Melt a little of the wax and

run the wax in the bottom and set the candle in the wax, and light the candle; then take a rubber tube similar to the one I have here, put one end of it down in the bottom of the bottle and breathe into that bottle the air that comes from your lungs; one good long breath or two will extinguish that candle, showing that the air that is exhaled is in a different condition from that which was inhaled. The former will not support combustion—one good long breath will extinguish the candle; but the pure air would keep the candle burning in the bottle all day. Now that power of the exhaled air to extinguish the candle is due to an ingredient known as carbon dioxide, which is breathed out by all animals. The same substance is found in large quantities under the hen. We call it carbon dioxide, because it is composed of carbon and oxygen. The first letter of carbon is C, and the first of oxygen is O, and a substance made of carbon and oxygen in equal volumes is denoted by CO; and since there is twice as much oxygen as carbon in this substance exhaled by animals we call it CO_2. Since it was found to be plentiful under hens we began to wonder if it has not really a function in incubation.

For the past year or two I had been working upon the question of humidity, and evaporation from water, and Mr. Graham invited me to take up the same line in the poultry industry; that is investigate the humidity in incubators. At that time we were of the opinion that humidity, and therefore evaporation, was a controlling factor in incubation, and we came to attack this problem: What is the humidity in incubators? What is the *best* humidity for incubators? What humidity in incubators will give a hatch most nearly approaching the hatch of the hen? That was the problem we had before us when we started. Mr. Baldwin's suggestion as to the explanation of humidity is right in line with what I had intended to do.

I have here three U tubes. In the first one we have some pumice stone, with sulphuric acid. The second tube is connected with the first and in it we have anhydrous copper sulphate, meaning copper sulphate, from which the water of crystallization has been driven off by heat. The third tube is connected to the second, and in this there is calcium chloride which has been fused, and the water driven off, all these substances having a great absorbing power for moisture. Now if I take this water-bottle and lead a rubber tube from it to the third U tube, and open the pinch cock and let the water flow out, that water running out will draw air through the tubes. The substances in the tubes absorb all the water from the air. We can measure in the bottle the amount of air drawn through, and if we have weighed the tubes before the operation and again after, we shall know the amount of moisture that has been taken out of a certain volume of air that has been drawn through. This is the way we determine the amount of moisture in the air at the present moment, called sometimes the absolute humidity. Humidity is derived from the word "humidus," meaning moist.

We have arrived at the absolute amount of moisture in a certain volume of air; now the amount of moisture in the air at the present time is not the greatest amount that the air can hold: that is, the air is not what we say, "saturated." If we were to sprinkle the floors and the walls and the ceiling with water and caulk up all the openings, windows and doors, and let the water evaporate for a little while, we would pretty soon have a saturated atmosphere, that is the air would have in it all the vapour it could hold, and no more water would evaporate. We might leave that water on the floor for months if every opening were stopped up and no more would evaporate after the air was saturated. The saturation moisture at any given temperature is the maximum amount of moisture that the air can hold at

that temperature. The saturation pressure varies for different temperatures. At seventy degrees, probably the temperature of this room, if we were to saturate a room 10 feet square and 10 feet high it would just hold 1 pound 2 ounces of water in the air in the form of vapor. A room the same size at a hundred degrees when saturated would hold 2 pounds 11 ounces of moisture in the air. It seems surprising, but the amounts are correct, and have been established. Those are not our own figures, but are taken from recognized authorities on the work. A room 10 feet square and 10 feet high at 32 degrees, just freezing, would hold only five ounces, so that here is a room 10x10x10 which has a saturation capacity varying with the temperature. It is twice as much at one hundred degrees as it is at seventy degrees and it is more than twice as much at seventy degrees as it is at thirty-two degrees, and so when we say the air is saturated, we have to know the temperature before we know how much moisture is contained in the air.

The "relative humidity," as we call it, is a different thing. Suppose that I take one thousand cubic feet of the air at the present time, and I find out that at seventy degrees one thousand cubic feet contains 8 ounces of water vapor; by this test I want to know what is the humidity of the room. How much did I say that room of one thousand cubic feet would hold at seventy degrees if saturated? It would hold 1 pound 2 ounces or 18 ounces, and now it has only 8 ounces; that is it has only eight-eighteenths of the moisture it is capable of holding; and if we multiply that by one hundred we have it in per cent. That is, the atmosphere in this room has practically 44.4 per cent. as much moisture in it as it has capacity of holding; so that a room 10 feet square at 70 degrees having 8 ounces of water in the one thousand cubic feet has a humidity of 44.4 per cent. The lower the humidity, the greater the absorbing power; so that the humidity is a direct measure of evaporation. That is all we can say at the present time. There are several factors controlling evaporation in general; there are humidity and circulation and temperature controlling evaporation. These three factors have not been separated, so far as I know, and the exact effect of each one determined; that is a problem, a very fruitful one, still to be solved. But the method I have described is not the way you are accustomed to determine the humidity; you use a "wet and dry bulb." Since the wet and dry bulbs are so generally used in determining the humidity, I want to shew how the determination is made by them. If you take a beaker of water and put a flame under it, and a thermometer in the water, and watch the temperature, you will see it rise and rise till the water begins to boil, probably 210 degrees here, and there the temperature of that water will stay although the flame is sending heat into it all the time. Now what is becoming of all the heat that is going into that beaker of water from this flame? It is being used in turning the water into vapor.

Suppose we define a unit of heat to be the heat necessary to raise a pound of water one degree, and then we find out the number of units to raise a pound of water from freezing up to 212 degrees, that would be 180 units. It will take 5.35 times as much to turn that water into vapor without changing the temperature a bit. That is known as the latent heat. It is called latent because we don't see any effect on the temperature. It is not latent at all, it is very powerful and active: it turns the water into vapor. Now, wherever evaporation is taking place that heat has to come from somewhere, to turn that water into vapor. This thermometer reads 67 degrees, and this other one reads 65 degrees. I will put a close fitting linen gauze over the first and dip it into water. The water is cold, but I will heat it with my hand. Now it comes up to 80 degrees, but I take my hand away and watch

the temperature; it was up to 80, it is dropping down to 75, and we will let it lie there a moment or two and see how far it will drop down. Of course it will cool down as low as the room temperature, but it continues to go lower. The question is, what is cooling that thermometer below the room temperature? Why, evaporation is taking place from that wet gauze, and there has to be some heat to cause that evaporation, and that heat has to come from the immediate surroundings, the mercury and air that is close to it. The temperature now is 62 degrees and this dry one lying here on the table is still 65 degrees. We will let them lie there a little while longer and we shall see that the wet one still goes considerably lower. I say the drop in the temperature of the wet bulb is determined by the speed at which evaporation is taking place. These two thermometers form a "wet and dry bulb" hygrometer. Here is another form: the thermometers mounted on a frame. They are both the same in principle. Now suppose that we used this wet and dry bulb at the same time that we determined the absolute humidity and the relative humidity by the U tubes. By this method we find out that when we have a certain relative humidity the wet and dry bulb differ by a certain number of degrees, and the results are set down; at another temperature and humidity they differ by another amount, and this result is set down. This method is continued for all temperatures and all humidities, and a complete table of results made. Then when we wish to know the relative humidity we simply take the wet and dry bulb readings, look these up in the table and see the humidity that is set down opposite them. That is the humidity corresponding to those readings.

Now, with that explanation of humidity I am going to show you the work we began last spring upon the subject of humidity in incubators. The first problem was to get a satisfactory form for the wet and dry bulb in incubators, and so we devised a wooden frame to hold and protect the two thermometers in horizontal position. A little bottle of water is lying down beside the wet bulb; that is better than the bottle standing on end, because the wick would have too far to draw the water, but with the bottle lying in this way the wick can draw the water to that wet bulb without much trouble; we can set this frame in the incubator right among the eggs and we can read the humidity from time to time. But there was one troublesome fact, and it was this, that possibly circulation in the incubator was not sufficient to give proper humidity reading.

Those tables that I have shown you here were determined for free diffusion in the air; some of them are correct when the wet and dry bulbs are fanned.

A MEMBER: You said some of them. Are they not all uniform?

Mr. DAY: They are uniform, all taken for free diffusion, but they are not all correct for fanning, for this reason: At middle humidity it makes no difference in the air whether you fan a wet and dry bulb or not. That was the first thing we had to determine, so we thought we would get a little motor that would fan this wet and dry bulb in the incubators, and so when we wanted them fanned all we had to do was to turn that button and there we have a current of air passing over the little wet and dry bulb.

With that arrangement we can also fan or not fan the wet and dry bulb in the incubator. In the ordinary air, at middle percentages of humidity, it doesn't matter whether we fan that wet bulb or not. It gives us the same reading, but when the humidity is very low or very high then it seems that the air cannot take the moisture away fast enough, and consequently it makes the wet bulb read a little high compared with this set of tables. If, on the other hand, we fan the wet and dry bulb when the humidity is low or high, that drives the air away, and we will reach a lower humidity by this method.

TABLE I.—HUMIDITY, EVAPORATION, CO_2, AND HATCH OF INCUBATORS.

Incubator.	When Set.	How Run.	Humidity of Room.	Humidity of Incubator.		Per cent. Evaporation from Eggs.	CO_2 in 10,000 Parts.	Per Cent. Hatched.	
				With Fanning.	Without Fanning.			Of Fertile Eggs.	Of Total Set.
Chatham 5	June 25	Dry fanned during day	62 9	40.5	.....	11.0			
	July 20	" "	66.2	38.5	.....	12 5	8.9(3)	61.5 (selected)	53.3 (selected)
	Aug. 20	Moisture in bottom	51 8	62.4	76.1	11.1	.....	85.7 (selected)	80.0 (selected)
								76.3 (shuffled)	61.0 (shuffled)
Chatham 6	June 25	Dry	62 9	37.4	.....	9 1			
"	July 18	"	62.3	41.0	47.2(7)	14.6	8.1(2)		
"	Aug. 12	"	68.1	40.7	51.2(8)	14.8	6.5(3)	78.6 (selected)	73 0 (selected)
								65.0 (shuffled)	47.0 (shuffled)
—Chatham	July 20	Dry	63.2	31.6	.....	15 8	9.3 3)	.....	
Chatham 4	July 20	Dry	66.2	37.3	51.0	14.6	7.8(2)	.....	
"	Aug. 20	Moisture on top	51.8	60.3	71.7	14.0	.....	71.4 (selected)	66.7 (selected)
								71.0 (shuffled	57.0 (shuffled)
New Prairie State	Aug. 7	Moisture in bottom	69 3	58.9(3)	76.6	9.2	3.3(no eggs)	72.0 (selected)	53.0 (selected)
							7.3(10)	68.0 (shuffled)	50.0 (shuffled)
"	Sept	" "	.....	.....	.....	9.1	7.3(9)	65 4 (selected)	56.6 (selected)
								70.0 (shuffled)	61.0 (shuffled)
Old Prairie State	July 17	Dry	62.3	33.9	.....	15.8	6 7(2)	.....	.....
"	Aug. 12	"	68.1	33.0	42 3(12)	15 3	5 6(3)	69.0 (selected)	60.0 (selected)
								65.0 (shuffled)	45.7 (shuffled)
Cyphers, Chas. A	July 17	Dry	62.3	35.9	44.8(6)	16.6			
Model	Aug. 12	"	68.1	37.4	50.4(12)	16.7	5.4(4)	78.0 (selected)	68.0 (selected)
								70.0 (shuffled)	48.0 (shuffled)
Dry Machines	Averages		65.1	39.0	47.6	14.6	.....	71.8 (selected)	63.6 (selected)
							7.3	66.7 (shuffled)	46.9 (shuffled)
								73.6 (selected)	64.1 (selected)
Wet Machines	Averages		57.6	60.5	74.8	11.4	.....	71.3 (shuffled)	57.3 (shuffled)
Chatham 2							3.2 (no eggs)		
Front Room							3.3		
Incubator Room							4.6, hen's level		
" "							2.8, machine level		

These two sets of tables are made up a little different. This one, the Dominion tables, seems to be made for fanning, but this other appears to be made up as nearly as I can tell without fanning, or at least with very little except a free diffusion. This is a set of dry and wet bulb tables by James Glaisher, published by Taylor and Francis, of London.

The CHAIRMAN: Is there any great variation between them?

A.—Considerable. We have used the Dominion tables entirely.

As soon as we found out that at low humidity there was a difference between the wet and dry bulb from fanning and not fanning, we decided to use the fan in the incubators, and we set it up in all the incubators, and we read the humidity in them from time to time.

I have here the humidity of incubators with fanning and without fanning. If you notice there is Chatham 5; here were two of the highest in humidity of 40.5 and 38.5, the humidity of the air during that time being 62.9 and 66.2. Another test was made with Chatham 5, in which we put moisture, and the humidity was very much higher.

The CHAIRMAN: The relative humidity of the room was nearly the same in the two cases. How do you account for the difference in humidity in the incubators?

Mr. DAY: I cannot explain except on the assumption that the incubators were a little different in the two instances.

The CHAIRMAN: The incubator was different in the two readings?

Mr. DAY: They were apparently the same. These are the average of all the humidities during the period of incubation. And so if there was a little error in one of the readings it would not vitiate the results to that extent. I can only explain that anomaly on the assumtion that one of the incubators that were apparently treated the same must have had a door a little looser than the other or something of that nature. A loose door reduces the humidity materially. Chatham 6: First hatch, humidity, with fanning, 37.4; second hatch, with fanning, 41.0; without fanning, 47.2; third hatch, with fanning, 40.7; without fanning, 51.2. Blank Chatham, 34.6, with fanning. Chatham 4: First hatch, dry, 37.3, with fanning, and 51.0 without fanning. Chatham 4: Second hatch, moisture on top, humidity 60.3, with fanning, and 71.7 without fanning. Note the great increase in humidity, due to the moisture on top. The New Prairie State, with fanning, 58.9 (3); without fanning, 76.6; old Prairie State. 33.9, with fanning; second hatch, with fanning, 33; without fanning, 42.3. Cyphers, with fanning, 35.9; without fanning, 44.8. The Model, with fanning, 37.4; without fanning, 50.4. Dry machines, humidity of room, 65.1; machines with fanning, 39.0; without fanning, 47.6. Wet machines, humidity of room, 57.6; machines with fanning, 60.5; without fanning, 74.8. Practically a difference of 50 per cent. between wet and dry machines, the humidity in the wet machines being 50 per cent. greater than the humidity in the dry machines. Those were the humidities in incubators—the averages of our whole summer's readings on humidity—and right here I would like to pay a compliment to one of our students for the way he followed this up; I refer to Mr. McKenney.

We had not been working on humidity very long when I said: "We must have some way of getting at the humidity under a hen." And after a day of thinking I devised what I have here, a nest hygrometer, (see Fig. 1), and I believe I exhibit to you the first nest hygrometer that has ever been used. It consists of two disks in the centre, each disk being of the same diameter as an egg, and the disks are perforated, the little holes allowing the air to circulate all through. Outside the disks is a little covering of strainer gauze—brass gauze. The disks are used to keep the gauze in a rigid form,

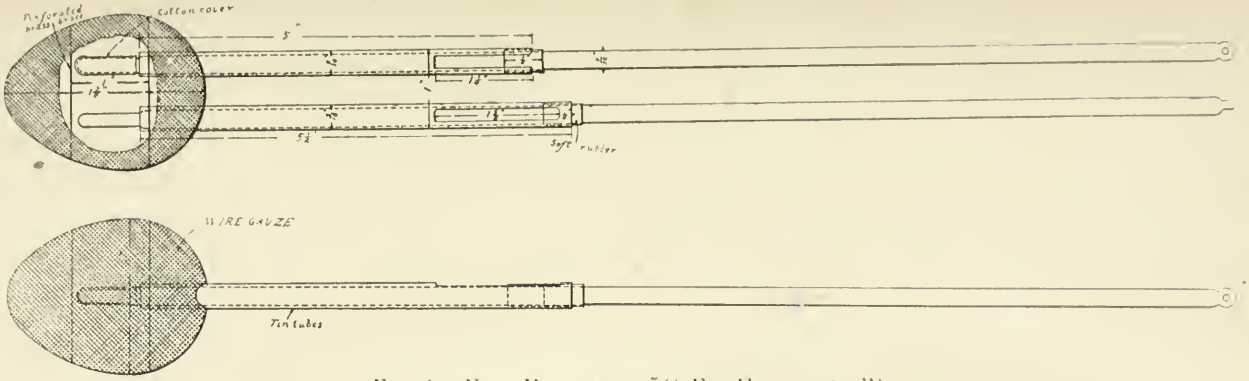

FIG. 1.—NEST HYGROMETER ("Egg Hygrometer").
Wet and Dry Bulb Thermometers in Egg of Wire Gauze. Thermometers are 15 inches long.

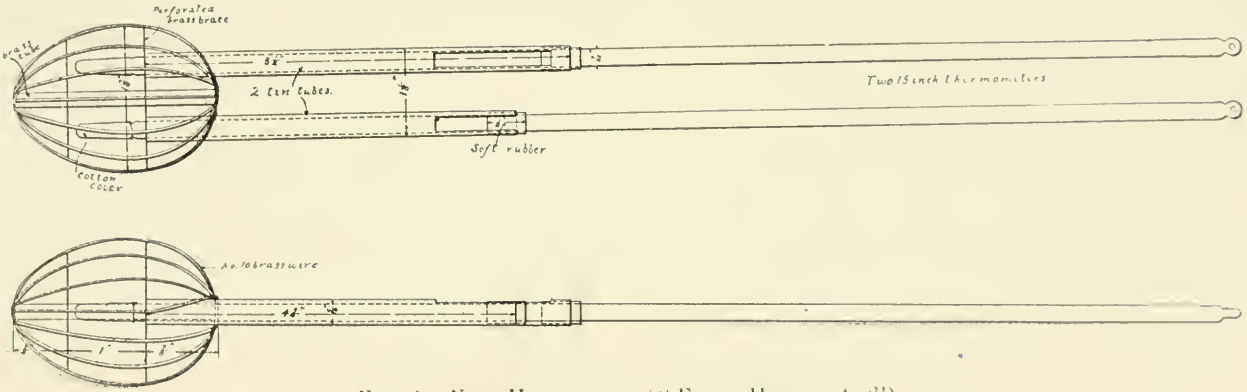

FIG. 2.—NEST HYGROMETER ("Frame Hygrometer").
Wet and Dry Bulb Thermometers in a Wire Frame Egg

so that the hen will not crush it when it is put in the nest. Now we didn't have these tubes on at first; we simply had two holes through the gauze, through which to insert the wet and dry bulb. I put these tubes on because I found that the hen was not particular how she treated the thermometer, and since they cost us $4.50 each we found we could not have her trifling with them. We could read off the hen's temperature by the dry thermometer and the humidity by the wet thermometer. I say that is the first nest hygrometer, and perhaps that is the only redeeming feature it has, that it is the first one.

I felt from the beginning there was something wrong with it, and, striving to find out what was wrong I happened upon what I consider one of the most important points. We will touch upon that later. Our wet and dry bulb readings and our humidity readings for hens were taken throughout the summer by this "egg hygrometer." We devised another later which we call the "frame hygrometer." The humidity under the first hen by the egg hygrometer was 75.7. The first seven hens, sitting on earth nests, averaged 76.2 per cent. humidity by this egg hygrometer. But, as I say, I felt there was something wrong with it. The first fear I had was that the evaporation from the linen gauze on the wet bulb thermometer in that egg would probably be sufficient to saturate the air under the hen, and consequently in that way we were vitiating our results—we were introducing a foreign element—and I set myself to determine the value of that objection. I have in this dish thirteen eggs laid close together, to cover the bottom. I want to know how much air there is under that hen. I take this flask, which contains 1,000 cubic centimetres of water, and I fill up the air space between the eggs with water, and then I will know how much air there is under the hen, because thirteen eggs is a fair setting. We will determine for thirteen and calculate for fifteen. That water just covers the eggs. I had 1,000 cubic centimetres in the flask to begin with; this flask holds 250 c.c. I will measure out what is left; the 250 c.c. flask is full, and probably 50 more in the large one; therefore we know how much air it takes to fill up the space between the eggs. It is 700 cubic centimetres for thirteen eggs. If you calculate on fifteen eggs you will find that it comes out 805 cubic centimetres of air under the hen sitting on fifteen eggs. I am going to use a little larger estimate. I will say 1,000 c.c. under the hen. I turn up these tables, and I find that at 100 degrees of temperature and at saturation pressure the air would hold 19.8 grains, which, figured out in the metric system, means that the water to saturate 1,000 c.c. of air at 100 degrees is equal to .045 grammes (this is one of the technical parts the chairman spoke about); that is equal to half a drop approximately; hence half a drop is sufficient to saturate the air under the hen.

The next point is, how much water is on that linen gauze of the wet bulb? Just one drop saturates it, and that does not wet it any too well. There can be a drop and a half or two drops on that gauze—never less than one drop. A hen sitting on a nest whose temperature is 100 degrees and where humidity is 50 per cent. would have how many drops of water in the air under her? If it was saturated at 100 degrees, she would have half a drop; but if the humidity was 50 per cent. she would have one quarter of a drop, and the drop on the wet bulb would be sufficient to finish saturating the air under her. Once it was saturated no more water would evaporate from the gauze.

The next point was to see if that theory was correct. I took this cork and put it on the stems of the hygrometer, and put the hygrometer in that bottle, which contains just half as much air as there is under a hen. I dried the bottle at the register before using it, and in order to get the air in the bottle the same as that in the room I swung it about for several minutes.

TABLE II. EGG HYGROMETER IN BOTTLE CONTAINING AIR.

Time in Bottle.	Humidity in Bottle.	Humidity of Room.
0 minutes	62.9	62.9
5 "	85.6	
10 "	87 9	
20 "	90.2	
40 "	92.7	
3 hours	95.2	

Here is a table shewing the readings of humidity in the bottle. First reading, when the air was put in, 62.9 per cent. The humidity had gone up to 85.6 in five minutes, 87.9 in ten minutes, 90.2 in twenty minutes, 92.7 in forty minutes, and I returned in three hours afterwards and the humidity in the bottle was 95.2. The cork did not fit perfectly tight, and so there was a little loss, else the air in the bottle would have been saturated. The next point: Will it do the same thing under the hen? Will it saturate the air under the hen as it did that in the bottle? To test this I took the egg hygrometer and put it under a hen for two hours. This table shews the conditions:

TABLE III. EGG HYGROMETER UNDER BUFF ORPINGTON ON STRAW NEST.

Time.	Nest Temperature.	Humidity in Nest.	Humidity of Room.
0 minutes	.....	.....	46.0
5 "	98.75	70.6	
10 "	101.25	69.7	
15 "	101.75	69.8	
20 "	102.0	69.9	
30 "	102.0	71.5(?)	
	Gauze becoming dry.	Gauze wetted afresh.	
40 "	102.25	70.0	
50 "	102.0	71.0	
60 "	100.5	69.6	
70 "	100.5	68.1	
80 "	100.0	64.4(?)	
	Gauze wetted afresh.		
90 "	99.5	69.3	
100 "	100.5	74.7	
110 "	100.5	72.6	
		Average 70.1	

Buff Orpington, on straw nest. The first column shows time under hen, the second the hen's temperature, the third the humidity under the hen, the fourth the humidity of room. Hen's temperature in five minutes' time, 98.8 degrees; and her humidity by this egg hygrometer was 70.6 per cent.: in ten minutes, temperature 101.3 degrees, and humidity 69.7. In fifteen minutes her temperaure was 101.8 degrees, and humidiy 69.7. In twenty minutes her temperature was 102 degrees and her humidity 69.9. In thirty minutes the temperature 101.0 degrees and her humidity 71.5. The wet bulb gauze was becoming dry in thirty minutes under the hen, but in the bottle the gauze was not dry in three hours. The gauze was wetted again.

In forty minutes hen's temperature was 102.25 degrees; humidity under hen was 70. In fifty minutes hen's temperature 102.0 degrees, humidity under hen, 71.0. In sixty minutes, 100.5 degrees; humidity under hen, 69.6. In seventy minutes, hen's temperature, 100.5 degrees; humidity under hen, 68.1. In eighty minutes, hen's temperature, 100 degrees; humidity under hen, 64.4. I wet the gauze again the third time, and in ninety minutes hen's temperature was 99.5 degrees and humidity under hen 69.3. In 100 minutes hen's temperature 100.5 degrees; humidity under hen, 74.7. In 110 minutes hen's temperature was 100.5 degrees; humidity under hen, 72.6. The average was 70.1. I think we are in a position to say that it is not possible for that egg hygrometer to saturate the air under a hen. There it was two hours. Three drops evaporated and only a half drop necessary to saturate. That is the amount evaporated under that hen was six times the amount necessary to saturate the air in the nest, and it has not changed the humidity materially from the first reading, hence there is no danger of its saturating the air under her.

But since the hen is getting rid of so much moisture in her nest from this egg, then it may be that the gauze is preventing the vapour from passing away as fast as it otherwise would; that is, this egg may be bottling up the moisture, preventing it from passing away, thus giving a different humidity in the egg from what there was under the hen. If so, what I was doing was measuring the humidity in the egg instead of measuring the humidity in the nest. I must get something that will take the humidity under the hen, so I asked a tinsmith to make me up something like this. (See fig. 2, p. 89.) It is a frame of wire, which has two stems for the thermometers, and there are two central disks to keep the wires out in the shape of an egg. It has a core through the middle to make it rigid. You would not think those wires would keep much moisture in. Having that made I came up to put it under the hen. Now, you can imagine the interest with which I did so. I took the hen whose humidity we had determined by the egg

TABLE IV. FIRST COMPARISON OF EGG AND FRAME HYGROMETER UNDER HENS.

Hen.	Nest.	Egg hygrometer.		Frame hygrometer.		Difference.
		Remarks.	Humidity.	Remarks.	Humidity.	
Bu. O..	Damp earth.....	Aver'ge of 10 readings	74.3			
" ..	.....	.....	.....	One reading.....	60.1	14.2
W. W..	Under evergreens.	Egg on right	65.8	Frame on left.....	50.6	15.2
" .	" ..	Egg on left	73.9	" right...	59.8	14.1
		Reading by A M. later in day.....	74.2	Reading by A. M. later in day.....	56.7	17.5

hygrometer, a Buff Orpington, whose humidity by ten readings was 74.3; I put the frame under, and we got a reading of 60.1. I read it again and again, and that is what it would stay at. You see that the frame hygrometer is giving a far lower humidity, 14.2 per cent. lower. That gauze egg was bottling up the moisture. But I could not believe the difference to be so great, and I took another hen, a White Wyandotte, under very different conditions, away out under the evergreens. I put both hygrometers under her at the same time, one on one side of the breast and the other on the other side.

The humidity by the egg was 65.8, by the frame on the left the humidity was 50.6, a difference of 15.2, very nearly the same difference we had in the other case. Now we take it again, and the humidity is 73.9 by the egg, but the frame on the right side gives a humidity of 59.8, making a difference of 14.1, about the same as bef re. Yet I could hardly believe that, and I got Mr. McKenney to go out later, and he got a reading of 74.2 and 56.7, which made a difference of 17.5. Still, I

TABLE V.—SECOND COMPARISON OF EGG AND FRAME HYGROMETERS UNDER BUFF ORPINGTON HEN ON DAMP EARTH NEST.

Time.	Egg Hygrometer.			Frame Hygrometer.			Difference.
	Remarks.	Temperature.	Humidity.	Remarks.	Temperature.	Humidity.	
10.25	Left, wet outward	100.0	69.4				
10.50	" "	99.0	67.6	Right, wet outward	99.0	53.0	14.6
11.00	Gauze dry, wetted			Gauze wetted			
11.10	Left, wet outward	99.5	70.8	Right, wet outward	99.0	55.8	15.0
11.12	Positions interchanged						
11.30	Right, wet inward	98.0	70.2	Left, wet inward	100.0	53.4	16.8
11.40	" "	99.5	70.8	" "	99 5	54.6	16.2
	Gauze wetted			Gauze wetted			
11.50	Right, wet inward	100.0	74.1	Left, wet inward	100.00	56 2	17.9
11.55	" "	99.0	72.3	" "	98.5	55.6	16.7
12.00	" "	99.5	70.8	" "	99.0	55.8	15.0
					Average		15.9

was not satisfied, and I took another hen and put the egg and frame hygrometers under her, the egg on the left side with the wet bulb out away from the hen's body, and the dry bulb next to her body, and I found that the humidity was 69.4. That was with the egg alone. I was taking our first hygrometer and putting it in alone, as we had been doing for a good while. Twenty-five minutes later the egg on the left, with the wet bulb outward away from her body, had a humidity of 67.6, and at the same time I got a humidity of 53.0 by the frame on the right side with the wet bulb outward, a difference of 14.6. Twenty minutes later the egg on the left side, with the wet bulb outward, gave a humidity of 70.8, while on the right side the frame, with wet bulb outward, gave a humidity of 55.8, a difference of 15. With the positions interchanged, and after twenty minutes with the egg on the right side, with the wet inward, I got a humidity of 70.2, with the frame on the left side, wet inward, a humidity of 53.4, making a difference of 16.8; and again ten minutes later, by the egg on the right side with the wet inward, I got a humidity of 74.1, on the left side, by the frame, with the wet inward, a humidity of 56.2, making a difference of 17.9. Five minutes later still I got a humidity of 70.8 and 55.8, a difference of 15.0. Thus a difference between 15 and 16 represents how much the egg hygrometer is astray. If you average all the tests, you find a difference between the egg and the frame hygrometer of 15.9.

TABLE VI.—HUMIDITY, EVAPORATION, CO_2 AND HATCH OF HENS.

Hens.	When Set.	Nest.	Humidity of air near hens.	Humidity in Nest.		Per cent. evaporation from eggs.	CO_2 in 10,000 parts.	Per cent. Hatched.	
				Egg Hygrometer.	Frame Hygrometer.			Of Fertile Eggs.	Of Total Set.
Buff O.	July 17	Under brooder	62.3	75.7	59.8	10.7	39.3 (3)	.....	.....
Buff O.	July 17	Damp earth in room	62.3	73.4	57.5	11.1	27.4 (3)	.....	.....
Buff O.	July 20	" " " "	66.2	76.0	60.1	11.4	24.5 (1)	91.7	73.3
S. L. W.	July 28	Ground, open air	.....	76.9	61.0	11.8	20.0 (8)	84.6	73.3
W. R.	August 7	In artichokes	77.7	80.0	64.1	9.8	28.5 (10)	85.7	80.0
Buff O.	August 17	Earth, room	73.4	75.4	59.5	11.5	26.0 (3)	92.3	80.0
B. R.	August 22	In evergreens	67.0	76.2	60.3	11.5	23.4 (2)	75.0	60.0 (2 broken)
.....	.....	Ground, beneath box	.....	.....	.....	10.2	.....	100	73.0
Averages	.....	.....	68.1	76 2	60.3	11.0	27.0	88.2	73.3
S. L. W.	July 17	Chaff	62.3	73.9	58.0	11.4	22.2	.....	.....
Buff O.	August 17	In colony house	67.1	75.9	60.0	12.1	.....	85.7	80.0
Averages	.....	.....	64.7	74.9	59.0	11.7	.....	.....	.....
Buff O.	July 20	Board	66.2	76.9	61.0	13.3	18.9 (2)	78.6	68.8
Buff O.	August 17	Board	73.3	75.9	60.0	12.8	26.0 (3)	80.0	53 (5 broken)
Averages	.....	.....	69.7	76.4	60.5	13.0	22.4	79.3	60.9
L. B. 2	July 4	Ventilated	61.1	64.4	48.2	14.7	.....	.....	.....
Buff O.	July 17	"	62.3	73.3	57.4	13.1	26.6 (3)	.....	.....
Buff O.	July 20	"	66.2	70.4	54.5	14.7	13.3 (1) (?)	77.0	66.7
Averages	.....	.....	63.2	69.4	53.4	14.2	19.9	.....	.....
B. R. 3866	August 7	Rubber	69.3	77.1	61.2	10.8	21.4 (10)	100.0	80.0
B. R. 7100	.....	Rubber, no eggs	.....	.....	.....	.....	10.4 (10)	.....	.....
Averages of	all hens on	eggs	67.4	70.1	59.0	12.0	24.4	86.0	71.5

We now come to the humidity under the hens in general, Table VI. First hen had a humidity, as given by the egg hygrometer, of 75.7. Subtract 15.9 and we have the humidity by the frame. You subtract 15.9 from each of these different readings by the egg hygrometer, and we get the humidity under all these different hens by the frame hygrometer. They are 59.8, 57.5, 60.1, 61.0, 64.1, 59.5, and 60.3, an average for these hens on the damp earth of 60.3. The hen sitting on the chaff, 58.0, and the hen sitting in the colony house, 60.0, by the frame hygrometer. That would be on straw, and so I put the chaff and the straw together as one kind of nest and the two average 59.0, not very much different from the hens on the damp earth. Two Buff Orpingtons which had nests on boards, humidities by the frame hygrometer were 61.0 and 60.0, an average of 60.5. The average humidity of the air while hens were sitting on the boards was 69.7. You observe the humidity near the board nests was a little higher than near the chaff and the straw nests, and it is also a little higher than near those sitting on the earth, consequently we have a little higher humidity under the birds, a little higher on the ground than on the chaff.

Q.—Taking the earth room, not the evergreens, these are two different sittings?

A.—Yes, they are two different sittings. Let us follow that down. The ventilated nests by the frame hygrometer were 48.2, 57.4, 54.5, though the humidity of the air near these hens was 62.3 and 66.2.

Q.—Are these different hens?

A.—Yes: they are all different hens, sitting under the same conditions. An average for the ventilated nests of 53.4; just compare that with the humidity in the earth, chaff, or board nests.

Q.—What was the ventilated nest?

A.—The ventilated nest was made of an ordinary box bored full of holes, set about four inches off the floor. Wire would have been better, but we could not procure one. It is not strictly a ventilated nest, but it did the trick.

There was one ventilated nest where the humidity was very low, which brings down the average of the three. If you take the average of these two it will still be lower than under any of the other conditions. Now we take the hens on a rubber nest. This nest was made of sheet rubber, about one-sixteenth of an inch thick, put in a nest made out of a box, and with that nest we get a humidity of 61.2, a higher humidity than in any of the other nests.

Q.—What was the result of the hatch of that?

A.—One hundred per cent. of the fertile eggs. It was 80 per cent. of the total eggs set.

Q.—That was one of the very highest?

A.—Could not have had much larger than 100 per cent. There are several that hatched 80 per cent. of the total settings. This hatched us as many of the total set as any other hen had hatched. That is only one hen on the rubber nest: the next one might not be so high. A rubber nest is a good nest, but I do not know that it is any better than the earth or straw. Now, here is an earth nest with 85.7 per cent. of the fertile eggs. We cannot say that the rubber nest is better from that one test. I am dealing with the humidity, particularly at the present time; the average humidity of all the hens by the frame hygrometer is 59.0.

But there is a loophole there yet—does the frame hygrometer give the right humidity? But there is a point I should have mentioned before this, and it is, maybe these thermometers are different. When I first got that

large difference between the egg and frame hygrometer, I took the thermometer out and dipped the two sets in water, and I found they agreed absolutely. I had one long thermometer and three short ones in the set. But they would not agree on the humidity when taken out of the egg and frame and used as two ordinary wet and dry bulbs, and it took about three days to find out why they would not give the same humidity, although the thermometers were all correct. In these three short ones and one long one the bulbs were of different sizes. The small ones were more sensitive, and would respond quickly to any change in the room. The long one was not as sensitive as the others because of its large bulb, and consequently it was just a little slow. Then I got four thermometers the same size and I tested them in the air; two hygrometers with four thermometers the same make, the same sensibility, and they would agree every time. This verification of the hygrometers was made before the final determination between the frame and the egg under the hen, and hence in that difference of 15.9 there is no chance of error due to thermometers.

Then the question comes in as to whether this frame was right. I took the frame hygrometer and tested it against an ordinary hygrometer of wet and dry, not protected, but exposed to the air in the free diffusion of the room. The frame hygrometer has the protection of the wire frame. This table will show you what differences they gave me, and how nearly they approached one another. Temperature of room 75.5, ordinary hygrometer 38.9, frame hygrometer 42.2, a difference of 3.3. The same temperature 40.7-42.6, a difference of 1.9. And so we can go on with it.

TABLE VII. COMPARISON OF FRAME HYGROMETER WITH ORDINARY HYGROMETER IN ROOM.

Temperature.	Ordinary Hygrometer.	Frame Hygrometer.	Difference.
75.5	38.9	42.2	3.3
75.5	40.7	42.6	1.9
75.5	40.7	43.0	2.3
75.5	38.9	41.2	2.3
75.5	38.9	42.6	3.7
76.0	41.2	44.8	3.6
76.0	38.9	42.6	3.7
67.0	64.2	66.6	2.4
95.0	74.6	74.6	0.0
76.0	34.0 (fanned)	34.0 (fanned)	0.0

With a humidity of about 40, that averages up about 3 per cent. difference between the ordinary and the frame. Making the humidity of the room 64.2 at a temperature of 67, there is only a difference of 2.4; making the humidity 74.6 and temperature 95 they read the same, the ordinary and the frame do. Therefore, at high humidities, such as we have under a hen, there is very little difference between the ordinary hygrometer and the frame hygrometer. I think that establishes very conclusively that, by the frame hygrometer, we are not far astray from the hen's humidity.

I was talking with Mr. Nix last night, and I hope he will excuse my mentioning his name. Mr. Nix was conversant with some of our results, and he asked me this question "Have you discovered yet where all this moisture under the hen comes from?" and I said "No." Well, I have changed my mind, and I think I can show you where that moisture comes from.

Twenty-five eggs which we weighed yesterday weighed 1,413 grammes and their volume was about the same, hence they are about the same weight as water. Fifteen eggs at the same rate would weight three-fifths of that, or 848 grammes. That is the weight of a setting of eggs, 848 grammes—say 850 grammes, just to make it easy. Now these hens evaporated 12 per cent. of the weight of the eggs. If we multiply 850 by 12 we have the amount of water that is evaporated from these eggs, 102 grammes of water in nineteen days, they being last weighed on the nineteenth day. Now it takes .045 grammes to saturate the air under a hen. If we divide the amount necessary to saturate the air into the total water that was evaporated, we will find out how many times this water would saturate the air under a hen. That comes out 2,266 times. Divide this by 19 and we find out how many times a day—119 times a day. How many times is that an hour? It is almost exactly five times. That is, there is evaporation enough under a hen to saturate the air five times an hour. Does that not answer very well where the humidity comes from under a hen? It seems to me it does. Calculated on thirteen eggs and 11 per cent. evaporation, the evaporation would saturate the air under the hen four times an hour, or ninety-six times a day.

Q.—Is there any comes from a hen's breast besides?

A.—I don't know.

Q.—Does a hen sweat?

A.—I do not know. We asked Dr. Reed, and he says there are no sweat glands in a hen's breast. All we can say is that so far as we know there are no glands.

Mr. Cypiers: There are supposed to be none.

Mr. Day: The same calculation with regard to a 110-egg incubator run dry shews that the evaporation from the fertile eggs is only sufficient to saturate the air in the incubator ten times a day. No wonder, then, that the air in the incubator is so much drier than that under the hen.

I am going to touch now upon another conclusion that we drew from these experiments with the hygrometer under the hen. I have shown you that with this hygrometer in a bottle three hours the gauze was still wet at the end of the time, and the air in the bottle was almost saturated. I have shown you that with the same hygrometer, the egg hygrometer, under a hen for two hours, the humidity remained at about 70 per cent., and was practically constant throughout the two hours. That was a surprising thing to me, and it suggested the idea of whether there was not quite a rapid change of air under the hen. If that hygrometer remained constant, is it not probable that there is a change of air under her? There is no doubt that there is a change of moisture going on through that gauze very rapidly. Of course, provided there was no change of air, the moisture would still come to the outside air, although the outside air was of a higher humidity. There is a point that is worth noticing. The humidity of the hens, an average of 59.0: the humidity of the room in the vicinity of the hen, 67.4, and yet the moisture is coming out all the time from under that hen. The temperature is different, and at a higher temperature of 100 and a humidity of 59 the vapor in the air is producing a little more diffusive force than is the vapor at the room temperature, and a humidity of 67.4. Now, by the vapor pressure we mean this: If you were to take a certain amount of vapor in a rubber sack, nothing but vapor in it, and you were to remove the pressure from the outside of the sack, that vapor would expand the rubber sack: that is, the vapor is exerting a pressure, and whether the moisture will travel from the nest to the outer air or from the outer air to the nest depends upon the difference in vapor pressure. If the vapor pressure under the hen is

greater than that in the air, although the humidity in the air is higher, then the vapor is going to travel from the low humidity to the high humidity; and that is no doubt what takes place.

Now, the question occurred to me, was not there a change of air under the hen? and these various tests I have made tend to bear out that suggestion. Now, the egg and the frame hygrometer under the hen show as great a difference as they do in the ordinary air. This test I have not told you about before. Taking the egg and the frame in the ordinary air, how do they compare? I took them and laid them over the edge of an incubator, and thus had the egg and the frame in the room temperature, under the same conditions. This table will shew you the results. When the temperature of the room was 76 and the humidity 40.7, there was a difference between them of

TABLE VIII.—COMPARISON OF EGG AND FRAME HYGROMETER IN ROOM.

Room Temperature	Humidity of Room by Ordinary Hygrometer.	Difference between Humidities given by Egg and Frame Hygrometers.
		Per cent.
76	40.7	23.3—diffusion
68	66.3	12.7 (2)—diffusion
96	48.9	9.0—diffusion
	48.9	11.6—fanned
	48.9	11.1—fanned 10″ away
	49.2	3.7—fanned 1″ away
	52.4	7.0—fanned 18″ away
	43.7	10.7—fanned 10″ away
	48.9	12.8—fanned 6″ away
		FLOOR WATERED
95.5	74.6	3.5—diffusion
		.3—fanned 6″ away
		5.2—fanned 10″ away
		3.1—fanned 18″ away

23.3; again, temperature 68, humidity in the room 66.3, a difference between the two of 12.7. If you take the average of 23.3 and 12.7 it will not be very far astray from the average of 15.9 under the hens. These are not all the tests made. I tested them time and time again in the air, and at middle humidity I always got a difference between them of from 12 to 15 degrees; when the humidity was very low I got a difference of about 23. When the temperature of the air was 96, the humidity at that temperature being 48.9, the difference between the egg and the frame readings was 9 per cent.; the difference between them if I fanned them was 11.6. You see, at this high temperature and low humidity fanning increased the difference. I do not know how far the fan was away from them. Next time I put the fan ten inches away, and right above, and there was 11.1 of a difference, with a humidity of 48.9. Humidity 49.2, with fan one inch away, the difference was 3.7; humidity 52.4, with fan eighteen inches way, a difference of 7: fan ten inches away a difference of 10.7; the fan six inches away, a difference of 12.8. This is at high temperatures. In order to produce a difference between the egg and the frame that I got under the hen I had to cause a good deal of circulation of air with that fan, and there was a certain distance at which the fan would give a greater difference between them than at any other; that was about six inches. We watered the floors and the walls and the ceiling, and the humidity came up to 74.6, and the difference between

the egg and the frame was 3.5. If I fanned the two six inches away there was no difference at all between them; that was too much circulation at that humidity. If I fanned them ten inches away the difference was 5.2. If I fanned them eighteen inches away the difference was 3.1. At this high temperature I could produce a difference between the egg and the frame by a certain amount of circulation over them. These experiments lead me to believe that there is a considerable change of air under the hen. We had put enough water under a hen to saturate the air six times over, and yet it did not raise the humidity very high, but gave us a large difference between the egg and frame readings; and we have seen that proper circulation gives a large difference between these two hygrometers; and therefore I draw the conclusion that there is a considerable circulation of the air under a hen. Not as much circulation as would be indicated by the difference of six times the saturation amount of water, because a certain portion of that vapor would go away by diffusion, provided there was no circulation; but I think some of that rapid escape of moisture is due to circulation. I have shown you that under the hen with her eggs there is enough moisture evaporating to saturate the nest five times over every hour. That was calculated on all kinds of nests, and under that we had a very high evaporation from the ventilated nests. So that the true evaporation under hens sitting on ordinary nests such as earth or chaff, instead of being 12, is only 11. If we leave out these three ventilated nests and the boards, then the average of 11.1, 11.7, and 10.8 becomes 11 per cent.. If that is figured out in the same way, it indicates enough moisture from eggs alone to saturate the nest four times an hour instead of five.

All that moisture does not escape by diffusion. Some of it, I believe, is escaping by a change of air under the hen. The questions is, "How does this change of air take place?" Just the same as we asked, " Where does the moisture come from?" we now ask, "How does this circulation of air take place?" You all know that air which is heated rises if it is is in contact with air which is cool. Under the hen there is air that is heated, and there is cold air which comes in contact with it at the outside of the nest. Now, the warm air will escape at the top of this little opening next the hen's body, and the cold air will come in at the bottom of the opening by the natural process of convection. Heated air rises and cold air sinks when they are in contact with one another. That is not assuming that there is escape of air any other way than by diffusion and natural convection. But if you ever watch the hen as she sits on the nest, you notice the feathers rise and fall. I do not know whether she does it all the time or not, but we have observed that fact.

Q.—Would not that be due to fear?

A.—I do not know.

Q.—Do not they do it more in warm weather?

A.—I believe they do.

Mr. Baldwin: Is it the motion of their breathing?

A.—Partly I believe, but I think there is another reason for it. Just as a dog has a way of cooling himself when he is warm by putting his tongue out, so the hen fluffs her feathers. Every time the feathers go up some air is drawn in among them, and when they fall some of the air is forced out; this is a process of cooling the hen. Whence is that fluffing going to draw the air? Is it going to draw some of the warm air that is coming up from her eggs, drawing it up through the feathers or is it going to draw in cold air? It seems to me that so long as this natural process of convection is going on at the edge of the nest when the hen fluffs up her feathers,

there is a certain amount of warm air drawn upward from the nest, and a certain amount of cold air comes down into the nest, because of that fluffing. It seems to me that these two considerations, convection and the fluffing, if we had thought them out before the idea of circulation was suggested by our experiments—it seems to me that they would have led us to the conclusion that there is and must be some circulation under a hen. I think that is a rational conclusion from consideration of these natural laws alone, to say nothing of the results we have shown by the hygrometers.

How does the circulation in an incubator compare with that under a hen? I know you are asking that question. That is a question, however, I cannot answer. The first suspicion of circulation came to me on August 31, and it was not until September the 5th that I was satisfied. The students were coming in on September 15th, so it was absolutely impossible for me to go into the question of circulation in incubators to any extent. We had about one dozen experimental machines, and all I could do was to make a hurried run over them, and the only conclusion I had come to was that the circulation in an incubator was very erratic and very uncertain, speaking of them as a class. I can get a difference between the egg and frame

Fig. 3.—Drawing Air from Hens' Nests, for Determination of Carbon Dioxide.

in one minute of twelve or fifteen, and the next minute I cannot get a difference of more than two or three between them, showing me that there is a fluctuation in the circulation that is going on in the incubator. We hope to do more on that subject in the coming season. There is room for a great deal of study, and we hope to have the pleasure of continuing it.

That ended our work on humidity and circulation. During all this time other tests had been going on, upon the amount of carbon dioxide under a hen, and the amount of carbon dioxide in the incubator and also in the room. This apparatus is used for drawing off the carbon dioxide from a hen. It is an ordinary water bottle with an opening near the bottom, where a glass tube with rubber nozzle is inserted, a pinch cock to control the flow of water. The bottle is graduated: the first ring on the tube represents 500 cubic centimetres, the next 500 more and so on, each ring adding 500 c.c. Here is a small bottle fitted with a rubber cork with two glass tubes through the cork; one of these tubes is passed to the bottom of the bottle and the other just goes through the cork. Into this bottle a little

caustic potash is placed, 100 c.c. of it, and this bottle is attached to the large one by a rubber tube, and a long rubber tube is attached to the glass tube that reaches the bottom. This long rubber tube is inserted into the nest or into the incubator, and the water in the large bottle here is set at zero or at one of these rings, and that pinch cock is opened and the water is allowed to drop gradually out of the bottle. As the water runs out of the water-bottle the air has to come in, and the only place it can come from is under the hen. It goes in and down through the long tube to the bottom of the bottle and bubbles up through the caustic potash and is drawn into the large water-bottle, and when we have 500 c.c. of air drawn through from under the hen it is indicated here, and we stop and cork up the small bottle and the caustic potash is taken over to the laboratory and the amount of carbon dioxide in it determined. Mr. Thom, of the department of Physics, has made the CO_2 analyses.

These tests of carbon dioxide were being made throughout the season. Chart No. 1 shews our CO_2 determinations in rooms and incubators. The amount of carbon dioxide in the front room is 3.3 parts in 10,000; incubator No. 2 with no eggs 3.2 parts in 10,000. Here is another with no eggs, New Prairie State, 3.3 parts in 10,000. If you are conversant with the literature on the subject of carbon dioxide you will know that three parts in ten thousand is about the standard amount, so we have the standard amount of carbon dioxide in the atmosphere excepting in the incubator room. The incubator room at the hen's level contained 4.6 parts in 10,000. The incubator room at the machine level contained 2.8 parts in 10,000, but it might be changed a little with different readings, that is the average of several. What about the incubator? Chatham 5, with three readings, had an average of 8.9; Chatham 6, with two readings, 8.1, three readings, 6.5; Blank Chatham, three readings, 9.3 of an average; Chatham 4, with two readings, 7.8; New Prairie State, 19 readings, 7.3; I will show you the reason we had such a large number as that in a few minutes. In two readings with the old Prairie State we had 6.7, three readings, 5.6; Model, 4 readings, 5.4; making an average for all machines wet and dry of 7.3 parts of carbon dioxide in 10,000.

The carbon dioxide under hens is given in Table VI., Buff Orpington, under a brooder, 39.3, an average of three readings. That is unusually high; the next one, Buff Orpington on damp earth an average of three readings, 27.4; Buff Orpington on damp earth, 24.5; Silver laced Wyandotte on the ground in the open air, 20.0, 8 readings; White Rock in the artichokes, 10 readings, 28.5; Buff Orpington in the evergreens, 2 readings, giving 23.4; making an average for the hens on earth nests of 27.0 in 10,000; Silver-laced Wyandotte on chaff one reading, 22.2, Buff Orpington on boards, 18.9 for two readings; three readings, 26.0, an average of 22.4; on the ventilated nest three readings, 26.6, one reading, 13.3, the average of those readings give us 24.4 parts in 10,000 under the hens.

There is another interesting fact about this carbon dioxide, and that is it appears to be pretty constant, and in order to test this point one hen, a White Rock, in a field was read from time to time. I have the readings here I will give them to you.

Table IX. Carbon Dioxide with White Rock in Field.

Aug. 9	22.2	Aug. 21	22.2
Aug. 11	15.6	Aug. 23 (1)	37.8
Aug. 16	20.1	(2)	33.4
Aug. 17	24.5	(3)	44.5
Aug. 20	26.7	(4)	37.8

Mr. Baldwin: Did you notice the atmospheric conditions during these observations?

Mr. Graham: We can tell you by referring back what the humidity was each day.

Q.—Can you tell me does the carbon dioxide in the air under ordinary conditions vary to any great extent?

A.—Very, very little. All the readings I have seen were in the neighborhood of 3 parts in 10,000, and all the authorities I have consulted on the subject give 3 in 10,000.

Mr. Baldwin: When a rain storm comes it washes the carbon dioxide into the ground, so that the fresh air you find is due to the clearing of the atmosphere?

A.—I would say that the oppressive condition of the air before a rain is not due to the carbon dioxide, but to the amount of moisture. Evaporation requires heat, and perspiration coming from the body takes a certain amount of heat as it evaporates, and that cools us. Before the rain, however, the humidity is very high, and this evaporation cannot go on as fast, and consequently there is not the same cooling effect, and we feel the air oppressive. After the rain the air usually becomes cooler.

These last four readings on Aug. 23 are all abnormally high, but they are constant. These four readings show very little diminution, I would not like to give that as an entirely representative condition.

Q.—Might that not be an error owing to the deterioration of your alkaline solution?

A.—That alkaline solution was treated in this way: when a certain amount was taken for measurement another amount was tested for its strength, and when the bottles went over to the laboratory the error in the alkaline solution, if there was any, was subtracted from the readings under the hen. Thus we eliminated any error due to change in the solution.

Mr. Nix: I remember looking over a great many of these records, and know that the carbon dioxide the last day was always higher than at any other time during the hatch.

A.—It seems to me it certainly is.

Mr. Graham: The idea on Aug. 23rd was to see if I could pump that hen dry; I worked at it from eight in the morning till noon, and as soon as we got out 500 cc. of CO_2 we took another bottle, taking 2,000 cc. altogether.

Mr. Baldwin: How long does it take to get out 500 cc. of air?

A.—I would say from half an hour to an hour. This taking out 2,000 cc. removed twice the volume of air that was under the hen, and it did not produce any reduction in the carbon dioxide.

I would not like to give that as a representative condition. It was only one test that was made. These ideas were a growth on us, and we give the readings to you as we took them, and we give you as many as we took. We are waiting for further light on these points, but we are giving you our results to date. Furthermore, the carbon dioxide is lower, but also practically constant in the incubator. There was a companion experiment to that with a Prairie State machine, and these are the readings for it:

Table X. Carbon Dioxide in New Prairie State Incubators.

Average of all incubators, 7.3. (See table 9.)

Aug. 11	5.0	Sept. 11 (1)	.7.6
Aug. 14	10.0	(2)	7.3
Aug. 15	8.9	(3)	7.4
Aug. 17	9.7	(4)	7.8
Aug. 23	4.5	(5)	7.8
Aug. 24	10.0		

Mr. Baldwin: These were not all taken in the same run in the same machine?

A.—Those in August were taken in one run, and those in September in another run; but the point is, that in drawing out this air, one thousand c.c. at a time, from the incubator, and drawing it out five times in succession on this last day, gave us a constant reading throughout.

Mr. Baldwin: Can you explain that, why it is so?

A.—I think there must be some carbon dioxide coming from the eggs.

Mr. Baldwin: When you were drawing it off, didn't you have free ventilation?

A.—No. These in September are a little lower, because it was the beginning of the hatch. They are from the egg level. I expunged the top and bottom readings, taking only those at the egg level, as these were the only ones we needed for the purpose of illustration here. Those on the top show a lower carbon dioxide than those on the bottom.

Mr. Baldwin: Any very great variation?

A.—Not very much; a little. We might make note of the evaporation. We had mentioned 11 per cent. on all hens, excepting those on the boards and the ventilated nests; the boards and the ventilated nests were both high. In the incubators the evaporation is also very high.

Mr. Baldwin: That is an average evaporation. Was there any marked characteristic about the individuality of the eggs?

A.—Yes. Mr. Graham will probably deal with the individuality of eggs. Take Chatham 5, with one of those little fans running fifteen hours, from 7 in the morning till 10.30 at night, the evaporation was 11 and 12.5 in two successive runs.

Mr. Baldwin: Was that taken by the weight of the eggs or by the barometer?

A.—By the weight of the eggs. The same machine, 11, all coming very close to the hen's evaporation; 9.1 was the reading on two selected lots of eggs that were in the same incubator, and it is abnormally low.

Q.—Still using the fan?

A.—No; this is another machine, Chatham 6, dry without fanning, the evaporation from the eggs being abnormally low. Next hatch, 14.6. In the next hatch, 14.8; in the next machine, Blank Chatham, 15.8; Chatham 4, dry, 14.6; Chatham 4, with moisture on top, 14.0.

Mr. Baldwin: There is a contrast. There is not that difference in the evaporation?

A.—There is a difference in ventilation.

Q.—What difference in ventilation?

A.—The door expanded with top moisture so that we could not shut it, and therefore for a considerable time the door stood a little open, and that made a greater evaporation. The evaporation with the bottom moisture was 11.1 per cent.

Mr. Baldwin: The point is that on June 25th, dry fanned, 11.0 was the percentage of evaporation, but with 20 per cent. higher humidity given by moisture in the bottom the evaporation was also 11. Is not that fanned, too?

A.—This, June 25th, was fanned. This, Aug. 20, was run under normal conditions.

Mr. Baldwin: If it was fanned, what would have been the difference?

A.—The moisture seemed to be more distributed when it was fanned. Then the evaporation here, where two machines were run at the same time, Blank Chatham, dry, 15.8; Chatham 4, dry, not fanned, 14.6.

Mr. Baldwin: The moisture on top, not fanned, 14.0; there is very little difference between this and the same machine run dry.

A.—Chatham 4, moisture on top, is the one that had the door open, and we planed it several times, and now there is a quarter of an inch crack since it dried out.

Q.—There ought to have been a question mark to that?

A.—There ought to be a question mark.

Old Prairie State, 15.8; another Old Prairie State, 15.3; Charles A. Cyphers, 16.6; Model, 16.7; the averages of all dry machines, 14.6; averages of all wet machines, 11.4. The wet machines, you will understand, approximating very closely to the evaporation under the hen on a natural nest.

Q.—Which is the best system to apply moisture—fanned at the top, or the bottom?

A.—I would apply it from the bottom; the top moisture gives too much moisture. It gives so much that the timber in the machine swells up and racks it all out of shape. We could see the moisture condensed on the closed door.

Q.—Is not that a good sign on hatching day?

A.—This condensation on the door continues all the hatch, and after a few days there was saturated air by the door.

Mr. Baldwin: There is the ventilated nest; per cent. of evaporation 14.7 in the first case, and in the third case gave 14.7; the next case 14.3. It comes pretty near the same as the averages of these dry machines.

Q.—Is there a great distinction between the dry machines and the ventilated nests?

A.—No, but the hatch is low. The hatch is lower than the machines. I am going to leave the hatching and individuality to Mr. Graham; he has prepared that.

To sum up, we find out as a result of our work this summer, that we have high carbon dioxide under a hen. We believe there is high circulation; we are satisfied that there is high humidity, and we have low evaporation. As a common result, in the dry machines we have low carbon dioxide, low humidity, high evaporation, and, we believe, a variable circulation. I say we believe on this circulation point, because it came to us at the end of the season, and we did not have the time to do all the work we wanted to do; but still we have done enough to make us believe that there is a good circulation taking place under a hen, and likewise a variable circulation in the incubator.

Mr. Baldwin: In the same incubator?

A.—Yes, in the same incubator. We have in all the wet machines low carbon dioxide, high humidity, low evaporation, and, I think, a variable circulation. To my mind the wet machines are approaching the hen's conditions. It would, perhaps, be out of place for me to say anything about the design of an incubator, but if I were designing one I would endeavor to make that incubator fit the hen's conditions with regard to the circulation. I would endeavor to have the air that is coming in a little cool. I would admit some cool air below the warm. I do not know what would come of it, but I think I would endeavor to secure that condition, because I am satisfied there is a certain amount of cool, fresh air coming down into the nest.

A.—Must not that intermix with the air almost at once, so that when the air strikes the eggs it must be mixed?

A.—Yes; and that is the difficulty in an incubator, that you have nothing to mix the air if you admit it at different temperatures into the machine.

A.—What is your conclusion regarding the evaporation?

Mr. Day: Hens sitting on normal nests average 11 per cent.; machines dry average, 14.6; machines wet, 11.4, so that the dry machines are much higher in evaporation than the hens.

That brings us to the conclusion of our investigation on this subject. I have only to add that it seems to me our first problem is to find out what are the laws that govern the physical conditions existing under the hen. When we know them I believe the mechanical part of applying the hen's conditions to the incubators will be a comparatively easy matter. We hope that we have taken one step nearer the solution of what the conditions under a hen are.

Mr. CYPHERS: What were your conclusions from the fact that there was a variation between the humidity readings of the two hygrometers, the egg hygrometer covered with gauze, and the other one?

A.—That screen has been bottling up the moisture in the egg.

Mr. CYPHERS: Does not it bottle up the moisture under the hen the same way?

A.—There is no doubt that they do introduce some moisture under the hen.

Mr. CYPHERS: When you add the moisture under a hen, are you not getting a higher degree of humidity than if you were not putting that moisture in?

A.—I think we are getting a little higher humidity under the hen when putting the moisture in there than we would without, but I have taken these two hygrometers in, I think, about all conditions, and I find that when I get a high temperature and high humidity with high circulations, they approached one another. When I get a low humidity with a circulation and a high temperature, then they differ widely. Let us refer to table No. VIII. The largest difference I could produce by circulation between these two when the temperature was 95.5 and the humidity 74.6 was a difference of 5.2, but at these middle humidities I could produce a difference of 11 and 10.7 by the proper circulation. This was without bringing into operation the difference between the warm and the cold air in contact, as we have in the nest. We have warm air under the hen and the cold air outside, and that difference of temperature brings about a difference of vapour pressure under the hen and in the air. Although the humidity is high, there is no doubt we increase it to a slight extent under the hen; but I think we have shown you that keeping these hygometers under the hen for two hours does not raise the humidity from the first reading, hence the moisture is not much bottled up under the hen. Besides, the greatest difference I can get between the frame hygrometer and an ordinary one in air was only about 2 to 3 per cent., on the average, and at high temperatures they read the same. So that the frame comes very close to the true humidity.

Mr. NIX: In the hygrometer tables published by the United States Meteorological Bureau at Washington, there is a reading for swinging thermometers and ne for still thermometers. When I heard of this experiment I thought that was the principle involved. A difference in the variation depends on the movements of the cylinder, and consequently you should be able to determine the air movements by the differential reading when using that gauze screen.

Mr. DAY: How can you get that? Suppose there is a circulation under the hen, how can you get the readings with and without fanning? May I say we tried that. We have an apparatus rigged up to fan the hygrometer under a hen, but when you start to fan, the hen takes an excursion.

A MEMBER: That would not be necessary if the air current was under the hen?

A.—Where are you going to take your still reading?

A MEMBER: You have me there. I see that is impossible.

Mr. Day: That is my contention—that the reading is a fanned reading under the hen; that the conditions are nearly perfect under her.

Q.—After you introduced the moisture, will it not increase the pumping operation? Will she not pump out that moisture?

A.—My impression is that the hens do not behave quite normally when we are experimenting with them, but there are some of them that are exceptionally good compared with others, and these ones that behave are the ones we have used for these experiments. I do not know whether she would pump a little more because there was a little more moisture there or not. I doubt it.

Q.—The readings under the hen are practically fan readings. Will the humidity under the hen agree when you take that reading without supplying any more moisture from the bulb of the thermometer?

A.—From all our experiments we believe the moisture under the hen is about as indicated by the frame hygrometer.

Mr. Nix: Your error from table No. VIII. is very slight. It does not amount to over 3 per cent.

Mr. Day: In supplying the moisture to that bottle the point is whether you have it corked. If it is not corked, the moisture will not be bottled up. The same applied to the hen's nest.

Table XI. Egg and Frame Hygrometers in a small Pail and Covered with a Book.

Temperature.	Time in Pail.	Humidity.		Difference.
		By Egg.	By Frame.	
98	0 minutes	63.6	54.6	9.0
	2 "	62.7	58.4	4.3
100.0	7 "	67.7	62.0	5.7
100.5	11 "	69.4	65.0	4.4
100.5	16 "	72.6	68.0	4.6

The egg and frame hygrometer were put in a pail and a book put over it. Now, that is pretty close to the hen's condition, if she bottles up the moisture from the hygrometer; the only thing it lacks is cold air outside. Yet the hen's humidity remained stationary during two hours, while the humidity in the pail rose from 63.6 to 72.6 in sixteen minutes.

Q.—Did you have the pail heated?

A.—We had the whole room heated. We have not the cold air outside the pail, but that is a condition we will have before we will meet again.

Q.—If the pail was made of a screen covered with a porous texture?

A.—That would answer, I think. As I say, the circulation idea came to us at the end of our term's work.

Mr. Cypiiers: You assume that the hens are the best mothers?

A.—I think that all our results establish it.

Mr. Cypiiers: Then, in other words, the hen will hatch more eggs than any incubator that can be made?

A.—I do not say that. I did not understand your question; but she is the best that has been made for hen eggs. She may not be the best incubator that can be made.

Mr. Cypiiers: She is not your best model?

A.—She is the best model so far.

Mr. CYPHERS: What about the little dipper that nests out in the marshes—the fish ducks? They will build on a very shallow floating mass or leaves and muck; the eggs will be from half an inch to an inch from the lake; it is anchored by a weed and the bird sets on that. The whole mass must consequently be wet?

A.—The duck is not a hen, and what suits the hen will not suit the duck, and while the duck might be a better incubator to the duck eggs, these conditions I do not believe would apply to hen's eggs, because every bird has its own habit and its eggs have their own individuality.

Mr. CYPHERS: We take the bird of Australia that buries its eggs in vegetable matter; what's the humidity around that egg?

A.—It would be high, it would be 100 per cent.

Mr. CYPHERS: That is an open question. There is more or less moisture, and I doubt very much if there is saturation.

Mr. DAY: There might not be saturation, but I believe there would.

Mr. CYPHERS: How about the carbon dioxide and the amount of vegetable matter?

A.—It would be high, I think.

Mr. CYPHERS: Go back to the dry nest. How about the male ostrich sitting on a nest of eggs along the borders of the Sahara desert where the bird has to set all day in the bleaching sun, where the sun would shrivel the flesh of a man, in order to get there to take the eggs. Wouldn't you have a dry condition?

A.—That is an ostrich egg.

Mr. CYPHERS: But we hatched ostrich eggs in the same incubator as we hatch the hen's eggs, with very nearly the same treatment.

A.—That doesn't say that a hen's egg requires just the same treatment as an ostrich egg, and the ostrich egg the same treatment as a hen's egg.

Mr. CYPHERS: We have the same results with very little difference in the actual treatment.

A.—It doesn't say you get as good results as an ostrich would get.

Mr. CYPHERS: No two hens act alike, and you have two different conditions there.

A.—That is so; but you take hens as a class they have an individuality compared with other birds; ostriches have an ostrich individuality; ducks have a duck individuality, a class individuality; and in the same way their eggs have an individuality corresponding to the class they are in.

Mr. CYPHERS: I cannot get a uniformity with the hens.

A.—Did you ever get a uniformity with anything? But you take the average conditions of a hen, and the average conditions of a duck, and the average conditions of an ostrich, and they will not necessarily be the same. The hen's average conditions will be one thing, the duck's average conditions another, and the ostrich's average conditions another; while there is an individuality between the members of the same class, yet each class, I believe, has a class individuality, with variations in the class, of course.

Mr. BALDWIN: We have in that column carbon dioxide an individual variation both of the hens and in the nests. Is that variation in the carbon dioxide, from your observation, due to a change more of condition, of individuality of the hen, or to the situation of the nest; an individuality of the nest, or an individuality of the hen?

Mr. GRAHAM: Some of that variation would come in this way, you might have three-quarters of your sample of air drawn out from under the hen and she shifts a little. I do not know whether this pumping out causes a tickling sensation or not, but when you get about through she jumps off.

Mr. Donovan: I think to make that column right we should expunge 13.1 from 18.9.

Mr. Baldwin: There is one case where you made ten tests of carbon dioxide, and there was an average of 28.5, and in two tests you only got 20.

Mr. Graham: That might be in individuality; the humidity in these hens' nests was 59.

Q.—Do you consider that the excess of evaporation of about 4 per cent. in the dry machine impaired the vitality? Wouldn't it bring out more chicks, the dry?

A.—It does sometimes, but it impairs their vitality.

Mr. Graham: That is only a supposition.

Mr. Day: In regard to their vitality, yes.

Mr. Graham: I would say for Mr. Cyphers and Mr. Nix, that if we are going wrong on this, tell us. You don't hurt our feelings at all. Anything and everything you have to say, say it out, and if you can turn us around I wish you would do so. It would save us a great deal of time and money, and we would be glad to have you tell us the proper way to run machines so as to hatch 100 per cent. of the eggs we put in and raise 100 per cent. of the chickens. We would be well satisfied if we could raise all that we do hatch.

The Chairman: I say, for all of us, that we appreciate very much Mr. Day's work. He has spent three hours in the presentation of his subject, and I congratulate him on the way he has put it. It is a very scientific matter, and I appreciate his effort to put it in a more popular way.

INCUBATION.

By J. L. Nix, Homer City, Pa.

Mr. Graham has just asked me to criticise the work presented to us by Mr. Day, and to tell you how to hatch 100 per cent. in an incubator—either of which I am loth to attempt to do. The scientific work done in artificial incubation at this station is new and valuable. I have been working in the same field, and have been getting approximate results. Mr. Day's experiments are to be commended for their scientific accuracy, and as largely eliminating the matter of guess work. Too much theoretical work has been done in incubation in the past. Beautiful theories in artificial incubation have been built up without any basis to sustain the positions of the authors. Most of the work done in the past has been in a large degree experimenting in the dark. All kinds of devices for incubating eggs in every conceivable manner have been tried, somtimes with fairly satisfactory results and at other times more or less failure has resulted. Any and all who may use incubators should be thankful to this station, as the work has been taken up from a scientific standpoint.

Aritificial incubation is very difficult and an intricate subject, even though it has been practised for thousands of years by the Chinese and Egyptians. The Chinese do not hatch over 50 per cent. of the eggs set, and those are from eggs laid during the natural season when fertility is high—results that can be surpassed by the most inferior incubator upon the market to-day. There are a number of factors involved in artificial incubation. The main factor, the one that has the largest influence, is heat. When a uniform temperature is applied to the eggs, moisture and ventilation may vary widely and yet satisfactory hatches may be obtained. Yet even when,

as far as we can see, the heat, ventilation, and relative humidity of the egg chamber is as nearly perfect as is possible to obtain, there seems yet to be something lacking. We believe incubators are yet capable of great improvement, and that in the future much better results will be attained than at the present time.

The incubator does not have quite the hatching power of the hen. Both seem to carry the eggs along equally well up to the first test—the sixth or seventh day. The death loss in the incubators from that period on is higher than under hens. The percentage of loss in the incubator is affected by extremes in temperature variations by too much or insufficient ventilation or too little moisture in the air of the egg chamber. Even when conditions are the most unfavorable strong chicks hatch, but the weak ones succumb. Usually the death loss in incubators is during the period of exclusion, and in a great number of instances where parallel tests have been made, the death loss during this period is larger in an incubator than under the hen.

Mr. Graham: Is that all with one make of incubator?

Mr. Nix: My tests were made with five standard makes of incubators. The hens were placed in the same incubator room, with incubators, and all were set with the same kind of eggs. The eggs were all carefully shuffled, and on the first test the percentage of variation of live germs would be less than 5 per cent., occasionally between the different machines it would be less than 2 per cent. Two tests were made with an average of 15 per cent. in favor of the hens. Tests made in England, by Prof. Brown, were between 10 and 15 per cent. in favor of the hen; and tests made at this station at Guelph, were about 10 per cent. in favor of the hen.

A Member: In the second test with your hens did they do as well?

Mr. Nix: You cannot determine the exact difference in hatching power between the incubators and hens by a few tests. There are so many things to be taken into consideration. I only made two parallel tests, and I am not entirely satisfied. Results are so influenced by the operator, location of the room, and the season; each and all of these have a great effect upon the results. Where the best manipulation is used and the environment suits the incubator, the difference between the hens and incubators grows less.

In the past season a few experiments were made in determining the influence of moisture upon the result in hatch, but the matter is still in doubt. In these experiments it made no difference whether the machine was run dry and had an amount of evaporation upon the eggs, or whether the machine was run with high humidity. Evaporation of the eggs ran from 9 to 12 per cent. The percentage of hatch was the same in all of the machines, the only difference was in the appearance of the chicks. Chicks that were hatched in the damp atmosphere had every appearance of being larger; the down at times would be one-half longer than on those chicks hatched in the dry incubator. It is very difficult to establish a fact in artificial incubation, because we get so many contradictory results; but so far as my observation goes the eggs that have been hatched in this high humidity have a larger amount of vitality and can stand more abuse, are easier to raise, and will survive under conditions in which dry hatched chicks will succumb. The first experiment reported along this line has been by C. R. Graham at the Storrs Experimental Station. Eggs were incubated in the Prairie State over wet sand, in an English Hot Water Incubator with moisture attachment, and in a non-moisture machine. The difference in hatch in the various machines did not vary over ten per cent. The chicks from each machine were toe marked so that they could all be identified, half

were put in a brooder, and half from each machine under hens. These chicks did not receive the best of care during the summer, and in a large degree had to rough it. When the chicks were counted in the fall only two chicks were living that were hatched in the dry incubator, 50 per cent. of those hatched in the hot water English Incubator, and 70 per cent. of those hatched over the wet sand. This is only one comparative experiment upon result of vitality in incubation. It may have been accidental, but the indications are very suspicious indeed of moisture having an influence upon the vitality of the chick.

What are commonly called the unknown factors in incubation are those elements of which we have a suspicion, but as yet have not determined their exact value, and one of these is carbon-dioxide. The physiological effects of this gas have not yet been determined experimentally, and there may be other secretions from the hen's body that have an influence. Future developments in artificial incubation will be along this line.

Quite a field of experimental work has been opened up. I will try to give you a view of this field, whether there is anything in it can only be determined by the future. You must first have a conception or theory, sometimes based on very slender assumptions. The influence of carbon dioxide upon incubation theoretically is very plausible. In those animals in which the young are brought forth alive, the embryotic or fetal blood is slightly charged with carbon-dioxide, the carbon-dioxide being in much greater excess than in the blood of the adult animal, for the reason the fetal blood is oxygenized by the lungs of the mother and the circulation through the placenta is very slow with the result that the carbon-dioxide is held back so that the fetus during the entire period of development is partially asphyxiated. This is natural, and the same thing appears to occur in natural incubation, although the development takes place outside of the hen's body; yet the egg is immersed in a bath of carbon-dioxide, the amount being from 12 to 15 times the amount found in normal air. Physiologically, carbon-dioxide has a retarding influence upon the action of the heart. Exactly what effect it has been upon the embryo no one has been able to determine. So it now seems that the development of incubators and incubation is not any more a mechanical problem as it has been in the past. The mechanical process of distributing the heat, ventilation, and the application of moisture seems to have almost reached the limit of development. The results to be gained in the future will be in the departments of physics, chemistry, or microscopy. The microscope will be used in the observation of embryotic blood in the egg in any and all conditions. The first thing to be determined is what is normal, and then what changes occur in the morphology of the blood by abnormalties in incubation, the effect of dry air, of damp air, and the effect of more or less carbon dioxide in the incubating egg chamber. It seems to me that we ought to find something there, but I am not prepared to say that we will. Human blood shows the slightest change in the physiological condition; the influence of surroundings, food, age, breathing of impure gases, cause blood degeneration that is very readily revealed by chemical and microscopic examination, and we do not see why the same results cannot be attained by careful examination of the embryotic blood in artificial incubation. The amount of carbon dioxide eliminated by the hen is very great. The amount eliminated by a human being (weighing 150 lbs.) is approximately 100 gallons in twenty-four hours.

Mr. Baldwin: What is the percentage of carbon dioxide in the human blood?

A.—I think it is in the neighborhood of forty points.

Mr. Baldwin: *The Medical Journal* says that, when the pulse is seventy-five the carbon-dioxide is 2 or 3.9 volumes per cent. That would be 3.9 to compare with your percentage.

Mr. Day: What about volumes per cent.?

A.—The work to which I referred, the point was not clear.

Mr. Day: It seems to me that it means that 100 volumes of blood will contain 3.9 volumes of carbon-dioxide.

Mr. Nix: Water will absorb almost an equal quantity of carbon-dioxide, and I would think that where the oxygen was forty that it would mean forty per cent. in volume. The effect of gases upon the blood is a new subject, one in which but very little information can be obtained. Where gas escapes in a room, and is breathed by human beings, the blood change is very marked, and can be determined chemically, especially the influence of carbon dioxide. This may be perhaps very scientific, but it has a bearing on artificial incubation especially in regard to the influences of carbon-dioxide. The most that is known upon the influences of carbon-dioxide is upon human beings. We know of no reason why the same conditions in a more or less degree will not hold good upon all kinds of animal life.

You have had Mr. Day's explanation as to where the moisture came from under a hen, and you have his solution given from the evaporation of the eggs. I put the same question to a professional histologist, and he made this reply—I give this as another man's view point: He began by saying that a frog breathes very largely through the skin, something like 75 per cent. and only 25 per cent. through the lungs, while in a human being we have 5 per cent. through the skin and 95 per cent. through the lungs. When the incubating instinct comes upon the hen there is a change of the capillary circulation on the under side of the hen's body; it becomes gorged with blood, and there is quite a perceptible amount of breathing through the skin, oxygen is absorbed and carbon dioxide and moisture eliminated. In the absorption of oxygen in the hen's body; oxygenizing of the tissues, carbon dioxide is set free as a by-product. This is eliminated by the lungs and skin. He further stated there were no sweat glands in the hen, and that it was not perspiration.

Mr. Graham: How did it get out?

Mr Nix: There is a difference between respiration and perspiration. Perspiration is a discharge from glands in the human being,—the sweat glands; while respiration is the elimination of gases through the pores of the skin.

Q.—Where did that hen get the carbon dioxide?

Mr. Nix: In the breaking down of the tissues, when oxygen is absorbed through the lungs or skin, it combines chemically with the carbon in the body, and is eliminated in the form of carbon dioxide gas.

Mr. Day: Why cannot the hen pass out the carbon dioxide and moisture from the surface of the body just the same as in the lungs?

Mr. Nix: That was the position of the histologist. This supposition is further borne out by an experiment made at this station. In a number of experiments with hens, glass eggs were substituted for natural hen eggs. The humidity and carbon dioxide were taken in those nests, and in those nests that were tight, especially the rubber lined nests, they found that the carbon dioxide and moisture was practically as high as in the nests that contained the natural eggs.

Mr. Day: Do you think there is more of this moisture from the hen than there is from the eggs? Do you not think there is more in the nest of a hen sitting on eggs?

Mr. Nix: Yes. You will find on examination of these charts and reports of this station that the carbon dioxide elements do not increase very much, if at all, from the first to the last day, as you would naturally suppose. If the carbon dioxide came from the eggs, during the latter part of the hatch we would expect a great deal more, but in a great many instances the carbon dioxide was less during the latter part of the hatch than at any other period. This might be explained from the fact that the hen is more inclined to move and fluff the feathers during the latter part of the hatch and the carbon dioxide escapes. I have examined a great many of these reports, and there appears to be a great many contradictions, so it is quite difficult to arrive at a positive conclusion.

Mr. Day: On the question of humidity, do you remember that it amounted to an evaporation from the eggs sufficient to saturate the air under a hen four times an hour. The amount of water to saturate 1,000 centimeters is the actual result of a large number of measurements. Since then I have made the same calculation for an incubator. An incubator has very much larger space, and there is only enough evaporation from the eggs in the incubator to saturate the air ten times in twenty-four hours. I took the average evaporation in the incubator.

Mr. Nix: The evaporation from the eggs will bring the humidity up very high in an incubator, provided ventilation is slowed up sufficiently, and this has been a common practice in Rocky Mountain regions, but I cannot believe that chicks secured in this manner are equal to those secured with a freer ventilation.

Mr. Baldwin: In what way can you save all the carbon-dioxide in artificial incubation?

Mr. Nix: I know of no way of retaining carbon dioxide in an incubator without reducing the ventilation to an injurious amount. If carbon dioxide is of value in artificial incubation it will have to be supplied artificially. We are very liable to make an incorrect theory or build up ideas in regard to incubation that are of no value. Simply because the hen places her nest on the ground, it does not follow that the ground is an important factor in incubation. The only value the ground has is in preventing the gases in the nests from escaping. The experiments here demonstrate that fact very conclusively.

As another factor that may be worth consideration is the influence of temperature the first twenty-four hours upon the final results. Mr. Baldwin has given us a resume of a French work upon monstrosities. This physician demonstrated the fact that the influence of abnormal conditions the first few hours of development is what produced monstrosities. His experiments were performed principally with hens' eggs, for the reason they were easy to obtain. By too much heat or too little heat the first twenty-four hours abnormalties were produced. Deformed chicks were the result almost every time, and anyone who has used incubators will have noticed that, where temperature has run too high or temperature has been too low, or the incubator contains a hot or cold spot, the percentage of deformed chicks is very much higher. This experimenter maintains that the most important part of the incubating period is the first twenty-four hours. It seems plausible. The hen brings the temperature up very quickly. The shell is a very good conductor of heat, the embryo floats in the top of the shell, and the temperature is practically uniform and constant the first twenty-four hours. This condition is extremely difficult to reproduce in an incubator. We cannot bring the temperature up quickly in an incubator for fear we would get too much, and the general practice has been to bring the temperature up very gradually.

To try the effect of development the first twenty-four hours, I constructed an incubator with a large hot water tank, brought the temperature up to 101½ degrees, and the amount of water was so great that putting the eggs in did not affect the temperature. The eggs were kept at a constant temperature for thirty hours. There is a theory that the albumen of the egg contains sufficient oxygen to supply the germs from three to seven days. So much for the theory; now as to the results. The germs started all right. An equal quantity of eggs were placed in an ordinary incubator. Upon the first test those eggs that were started in the water bath were 35 per cent. behind the eggs that were started in an incubator. The second test about 50 per cent. more were dropped out of those that were started in the water bath, and but very few chicks hatched; while the eggs started and developed in the incubator the whole period hatched all right.

Mr. DAY: How did this French experimenter bring his temperature up quickly?

Mr. BALDWIN: I think he used an incubator where there is an absolutely uniform temperature—a bacteriological oven.

Mr. GRAHAM: Is that book astray?

A.—Not necessarily. My experiment simply shows that oxygen is necessary for the growing germ from the moment it starts.

Mr. DAY: Do you know if a water bath introduced any water into the eggs?

A.—I do not think so.

Mr. DAY: I will tell you the reason I asked the question, and why we determine the volume of these eggs by the water. We watched the little bubbles of air coming out of the eggs. It seemed to me that at least there was water going in.

Mr. BALDWIN: I think the method you adopted was not the best one—to make the experiment with eggs smothered in water.

Mr. NIX: I attribute the poor results in the water bath to a lack of oxygen and not to the effect of the water. It seems to me it is a very important point, one worth investigating—the influence of heat or manipulation the first twenty-four hours of development.

Mr. ROBERTSON: Did you ever apply pure oxygen in an incubator?

A.—I have not.

Mr. GRAHAM: We put some pure oxygen in the machine some years ago, and it was not satisfactory. It seemed to burn the chicks up; they used too much oxygen, possibly.

A MEMBER: How many times is it necessary to turn the eggs in a day?

Mr. NIX: That point has not been fully determined. We do a great many things in incubation from tradition, and never ask the reason why. It has been the general practice to turn twice a day. I met a person at one of the shows who said that last season he tried an experiment of hatching and never turned the eggs at all, and he claimed to have hatched 65 per cent. of the fertile eggs; but I should like to see the experiment tried before accepting the statement as conclusive.

A MEMBER: Do you think a square machine will hatch more than an oblong one?

A.—The shape of the machine would have nothing to do with the result of the hatch unless the shape influences the distribution of the heat. As a rule, with a long, narrow machine it is more difficult to get a uniform temperature than in one that is approximately square.

Q.—Then a round machine will hatch better than a square one?

A.—I have never found that a round machine did any better work than a square one. So far as my observation goes, a well constructed square machine will show a more uniform temperature than a round one.

PRACTICAL EXPERIMENTS IN ARTIFICIAL INCUBATION.

By W. R. Graham, B.S.A., O.A.C., Guelph.

I do not know whether it is altogether policy for me to talk to you about our work in connection with artificial incubation. Most of you who have been attending the sessions of the Institute are largely, by this time, filled up on this question of incubation. You have heard the scientific side and the practical side, and it appears to me it is almost a waste of time for me to talk to you about our results and work on the practical side in connection with this subject. Over and above all this, a good many of you have heard me tell what little I know about artificial incubation.

However, I might say that from a practical side it is a very complicated problem, and the more experimental work we do in conjunction with scientists the more experiments and the more experimental work is required to be done; for the simple reason that the moment we take up one problem we find that problem becomes two; and when we get two going, we find that there are four, and when we get four they become sixteen. The moment we get one problem there is another branching up. I have at the present time enough problems on incubation that can be worked to advantage to keep ten to fifteen men busy all season on nothing but artificial incubation. I do not expect to solve all these problems in my life time, and my ideas on artificial incubation are purely cosmopolitan. If anybody else wants to take the problems up and work them out, I would be glad to have them do so.

The difficulties in connection with the subject is this: In the beginning there is so much depends on the eggs you are working with. The eggs vary, as I will show you by a chart. The eggs vary considerably by the individuality of the hens. Each hen has an individuality of her own. Some hen's eggs will hatch in almost any condition—what you might call good, bad, and indifferent. There are hen's eggs that will require skilful manipulation, or they require the very best science and art in order to hatch good chickens from them. Eggs vary more or less in that respect. In addition to that, there comes up the question of the individuality of the chickens which are hatched under these various processes. For example, you will notice in these charts that we have been able to hatch eggs under a wide range of variation of evaporation.

My opinion at the present time is that the humidity of incubators, or will say the size of the air cell in the egg which is being incubated, or the loss in the weight during the process of incubation, has no material effect upon the percentage of hatch. The only true way to gauge or to measure the evaporation of the eggs during the process of incubation is by weight. The size of the air cell I do not think is much of an indication, because we find the eggs vary so, individually. Each egg has a peculiar characteristic of its own, and you can take half a dozen eggs and hold them up to the light, and take half a dozen operators and they will have half a dozen opinions as to whether the air cell is small or large. When you weigh them you find what percentage they have lost. You need, when weighing eggs, a pair of scales that are accurate. If you use a pair of scales that weigh a quarter of an ounce or finer you can establish fairly well the evaporation of your eggs, weighing them on the ninth day when you make the first test, and again on the eighteenth day, when you close your machine.

I should like to add that the Poultry Division of the Experimental Union would like to get, if possible, this season a large number of experimenters, who will weigh the eggs that they are incubating, the object being that we want to find out and to have a check on our own results as to what effect moisture has upon vitality of the chicks. Those of you who have seen the photograph of moisture chicks and dry-hatched chicks will have noticed that there is a difference in the appearance of the chicks. I cannot say at the present time that a moisture chick has actually more vitality or more stamina than a dry-hatched chick. We have not followed the experiment long enough to say one way or the other. It is one of the lines of our investigations from a practical standpoint this year, along with Prof. Day's scientific side of incubation.

We have had some results which probably should not be talked about. That is, moisture chickens, so far as we have observed, have a considerable advantage in mortality over the dry-hatched chickens, or, in other words, we have had a much higher percentage of chickens live and thrive that have been hatched under moist conditions, as compared with those hatched under dry conditions. You might wonder why we did not work this problem last year. It was almost the end of the hatching season before it established itself in our mind to be worthy of consideration. We did not consider that this was a very serious problem until the middle of August, and as we ceased our operations of the incubators about the middle of September we did not have much time to follow it. We have been watching the chicks this winter, and the results so far are about as stated previously. I have no doubt that a hen can hatch chickens under a wide range of evaporation, and I have found in growing these chickens that there is a difference in the growth made by them; a difference in their vitality according to the manner in which the chickens are hatched. The question of vitality appears to me to be the most important question of the hour. We must be able to hatch large numbers of chicks that will develop into strong, thrifty, vigorous birds, capable of turning food into the finished product at minimum cost. Without vitality we cannot do this, and from the practical side I would like to impress upon you to watch the chickens from a vitality standpoint.

No.	Machine.	No. of weighed eggs.	No. of infertile eggs.	No. of decayed eggs.	No. of fully formed dead in shell.	No. of chicks hatched.
1	New Prairie State, No. 1, moisture machine	30	4	3	6	17
		15	4	1	2	8
2	Model No. 2 Incubator	15	2	1	2	10
		15	3	...	2	10
3	Chatham No. 3 Incubator, no moisture used	15	2	...	3	10
		15	2	1	1	11
4	Open Bottom No. 4, Prairie State	15	4	1	2	8
		15	2	3	....	10
5	Chatham Incubator No. 4. Moisture applied from the top	15	1	1	3	10
6	Chatham Incubator No. 5. Moisture applied from the bottom	15	1	1	1	12

No.	Average evaporation of the hatched eggs.	Highest evaporation of the hatched eggs.	Lowest evaporation of the hatched eggs.	Percentage hatched of the selected eggs.	Percentage hatched of of the fertile selected eggs.	Percentage hatched of the entire machine.	Percentage hatched of fertile eggs of entire machine
1	9.1	13.7	5.9	56.6	65.4	61	70
	9.25	11.5	7.1	53.3	72.7	50	68
2	16.3	24.5	11.7	66	76.9	48	70
	16.12	18 6	12.7	66	83.3	51	75.4
3	14.0	17.7	10.2	66	76.9	47	65
	13.81	15.7	12.3	73	84.6	54	64.9
4	15.37	19.2	11.9	53.3	72.7	45.7	65
	15.75	18.9	12.7	66	76.9	60.6	75
5	12.	16.9	8.6	66	71.4	57.4	71
6	11.1	21.2	6.9	80	85.7	61.7	76.3

In connection with our incubator experiments last year, we used in each incubator fifteen to thirty selected eggs. What I mean by selected eggs is that these eggs were laid by trap-nest hens. They were practically the same hens' eggs that we were using for incubator purposes under the natural method—under the hen. The balance of the incubator was filled with common eggs. We wanted to keep data principally on the selected eggs. They were practically the same eggs that were going under the hens, and we wanted to watch these carefully.

Mr. DONOVAN: Selected from what?

Mr. GRAHAM: Trap-nest hens. You will notice, following this chart all the way through, that in nearly every case the selected eggs hatched better than the total eggs set in the machine. That was a conundrum to me, for the reason that the selected eggs in every case were given considerble exercise. For example, it takes a man nearly one hour to weigh fifteen eggs with grain weights. Those eggs were weighed on the fifth day, the tenth day, the fifteenth day, and the eighteenth day of incubation. While these eggs were being weighed, the entire tray of eggs was left out in the room, or they were aired in a room of ordinary temperature for one hour. When the selected eggs kept hatching all the time better than the other eggs, it began to develop in our minds that possibly exercise was a good thing for the eggs—that is, in weighing the eggs we had to put them in a basket and carry them in to the scales, and when they were in the scales they were moved back and forth until the scales balanced, and the idea suggested itself to me that probably what we wanted to do was to put the whole lot of eggs into a basket and walk around the plant with them.

The last machine I ran I filled the entire machine with selected eggs from trap-nested hens—practically the same hens that we were using throughout the whole season. In that hatch there was no perceptible difference in the results between the weighed eggs and those not weighed, individually. We want to follow that more closely this year. It does not appear from a scientific standpoint that there is anything in exercise. As I said at the beginning, this is a very complicated question, and one has to be very careful in drawing his conclusions. This year we are at the present time trap-nesting a large number of hens, with the idea of selecting, we will say, 150 normal hens to do our incubator experimental work. I want to use the

same hen's eggs in natural incubation and in artificial incubation, and I want to use the same hen's eggs in the dry machine, as well as with moisture and in the carbon dioxide machines, and at the end of the year we hope to see if there is any difference in the size and maturity of the chickens. You have to make very careful comparisons in development and size, color of plumage, in their power to consume food in the way of fattening or egg production. One may have some opinions of his own, but in this particular instance it is probably better not to state them. I have a weakness for thinking that the old hen knows how to do her business.

You have heard discussed the question of carbon dioxide, and how to apply that is quite a question. If anyone wishes during the season to use milk in incubators in the way we operated the machine in the experimental room, I will undertake to furnish the bacteria to make the odor that was so characteristic in that incubator. In the place of using the ordinary moisture in the tray we used sterilized skim milk, and into that skim milk we put bacteria which we got from the bacteriological laboratory. Its purpose was to give off the carbon dioxide gas. I venture to say that that machine would not hatch chickens, but at the same time it hatched a slightly higher percentage of chickens than other machines of the same type. Exactly what we gained in the amount of carbon dioxide in that machine I cannot tell you at the present time, because I have not the analysis of all the gases. With the test we made there was a slight gain that might be worth trying again. The reason I would like to have a number of co-operative experiments outside is that I am inclined to believe that incubators are subjected to environment. I do not like to entertain that idea, but my observation leads me to believe that they are. I think Mr. Baldwin has observed the same thing. I know that incubators here sometimes, especially some makes or designs, give quite different results in different cellars. We have had an opportunity of testing incubators in about six different rooms. Some of these machines gave quite different results in different rooms, and the results may be due to the conditions of the eggs at the various seasons of the year in which the incubators were operated. In running the machines in the various rooms it was not to test the incubators for environment; it was merely to meet the conditions of the operators. We wanted to run the machines at Macdonald Institute so that they would be convenient for the ladies to look after the machines, and each experiment that had been carried along that line has been done principally for the convenience of the operator.

Mr. Donovan: You have settled that point in your mind?

Mr. Graham: I am satisfied in my mind. I have no data to prove it. The reason I mention this point is that we may come to a conclusion here with our machine, that so and so is the proper way to operate a certain machine to get the maximum hatch. I am not sure that that would be the proper way to operate that machine in some other locality. I have no proof to prove one way or the other, but that is one of the dangers I see.

Mr. Baldwin: Do you get a record of the pressure?

Mr. Graham: We have not done so. With co-operative experiments with incubators we have got to get down to the scientific side of it. The more detail we get on those charts the less charts we get back; they confuse the men when they get them. I would prefer the loss in the weight of the eggs during the incubating period to knowing the humidity of the room or incubator.

Mr. Nix: In regard to weighing the eggs, for the ordinary operator they do not have easy balance for using the grain weight, and in my experience I use the six-day apparatus, and that evaporation the first six days—six

to twelve days—is practically uniform; and in my later tests I weighed the whole tray of eggs and weighed it on an ordinary scale, and I deducted the weight of the tray. At the end of six days I weighed the tray again, and thus got the evaporation loss. Multiplying that by three, and I had approximately what you would get with the grain weights with a great deal of pains at the end of eighteen days.

Mr. GRAHAM: I suggested that they weigh their eggs on the ninth day, and weigh again on the eighteenth day, and use a set of scales that weigh to the ounce. Probably you would make your test there, and take out the infertile eggs and deduct that from the entire weight. I want to draw your attention to one fact of setting hens in the winter time. I think the proper way to set a hen is to get her to sit out of doors on the ground, as nature would have her. If you take a hen and set her in this room on straw or on a nest that is partially ventilated, you will not get a hen under normal conditions. We had a hen setting on rubber cloth. The rubber was washed perfectly clean, and after the hen had been sitting on that nest for six days we could get scales that came off the hen's body—scales off the feathers and off the skin.

Q.—What kind of scales?

A.—I do not know. I presume they came from the feathers and skin. I had also some doubts as to whether six inches of earth in the box in the summer time would give the same conditions that we get outdoors. So far as I can see, we get practically the same results with six inches of earth put in the bottom of a box in which you set a hen as you get with a hen sitting outdoors on the ground. If you set a hen on rubber you will get just as good conditions as you can get outdoors. There is a difficulty in operating the rubber nest. The rubber should be laid slack enough, so that the eggs will not pile up in the middle, and so that the hen can have plenty of nest room. We had a hen set in the artichoke field, in one of the lowest parts of the field, and while she was incubating we had several rain storms. I have seen the humidity at the outside of her nest as high as 85; she had very moist conditions, and her evaporation was lower than any other hen. The hens sitting inside of the building, on rubber, had nearly the same amount of evaporation.

The rubber nest, I think, may be of some practical value to those wanting to hatch chickens with hens in February, March, or early April. To get the temperature at which a hen incubates we tried using the paper as Mr. Baldwin did. The results were 100 to 107 degrees, and it varied, no matter in what position you put the thermometer under the hen. My impression was that we were getting mostly the hen's temperature, not the temperature of the air in which she was incubating the eggs, and when Prof. Day designed the wire eggs for taking the humidity, we thought we were getting nearer to what the air temperature was around the hen during the process of incubation. We found the temperature of the air around the hen, as indicated by the thermometer, was not higher than 102 degrees, mostly 101. We found, in addition to that, that when we came to compare incubators of the same make at temperatures of 101, 102, and 103—of course, you will find in the summer time that an incubator probably varies more than it does in the winter time, in mid-day they are apt to go up a little—that we got better results in operating our machines at a temperature between 101 and 102 than we did in any other temperature.

From a practical standpoint, I like to operate a machine with two thermometers—one hanging up and a clinical thermometer on the eggs—for the reason that I then get the maximum temperature that is registered any time

during the day. One has to be very careful about testing a thermometer. A thermometer may be right to-day, but six months from now it may be one or two degrees out. A thermometer that was accurate last summer two weeks ago was 2½ degrees out. You have to test them practically every year to know where you are at.

Mr. BALDWIN: A friend of mine showed me a good idea with regard to taking the temperature of the hen compared to the temperature in the incubator. He took an ordinary egg and scattered its contents. He made a small hole in the small end of the egg, and he inserted a small glass tube that went down to the bottom of the egg. Before he inserted the tube he dropped in some sealing wax, and then put in the glass tube, so as to fasten the glass tube at the end. Before he inserted the glass tube he had two holes cut in the glass tube, and he filled this part of it with cotton batting. Then he had a clinical thermometer that fitted inside this glass tube, with the bulb opposite that hole, and he put around the clinical thermometer some cotton batting to stop it, and also to close it to stop any heat. That is a method any person can try, and I will say this, that in tests which Dr. Wagner made he found that under a hen the temperature in the center of the egg was 101.2 degrees. He then tried the same thing in the incubator, and he found that to get 101.2 degrees in the center of the egg he had to get 103 degrees on the top of the egg. He found that quite independent of any observations I was making, and I came to the conclusion that 103 degrees was the right temperature at the top of the egg, as I explained yesterday.

Q.—Did you ever see genuine rotten eggs in an incubator?

Prof. RICE: I never have.

Mr. NIX: If they were under a hen for a day or two previously, I have. I think those decayed eggs—those popping kind— come from an inoculation of bacteria that is contagious. Just by rubbing the eggs together they will inoculate.

INDIVIDUALITY OF EGGS LAID BY THE SAME HEN IN EVAPORATION AND HATCHABILITY.

Hens No.	How Incubated.	Percentage Evaporation	Result.
5,142	Machine No. 1	8.0	Hatched.
"	"	8.2	Decayed.
"	"	5.9	Hatched.
"	"	6.6	"
5,905	"	7.8	Fully formed, dead in shell.
"	"	8.9	" " "
"	"	8.3	Hatched.
"	"	8.4	"
234	Hen on ground	13.0	"
"	Machine No. 5	10.0	"
"	Machine No. 6	8.3	"
"	Hen on raised nest	11.3	"
"	Hen on board and straw nest	9.6	Chick about one half formed.
"	Machine No. 4	17.8	Hatched.
"	Machine No. 3	10.2	"
"	Machine No. 2	14.1	Fully formed, dead in shell.
50	Hen on raised nest	23.5	Hatched.
"	" "	20.0	Fully formed, dead in shell.
"	No. 3 Incubator	13.6	Hatched.
"	Hen on raised nest	14.5	Fully formed, dead in shell.
"	" "	12.3	Hatched.
"	" "	14.2	"
"	Hen on ground	11.6	"

INDIVIDUALITY OF EGGS LAID BY THE SAME HEN, ETC.—*Continued.*

Hens No.	How Incubated.	Percentage Evaporation	Result.
50	Hen on ground	7.3	Fully formed, dead in shell.
"	" "	7.2	" " "
7,099	Machine No. 5	19.7	" " "
"	Machine No. 6	15.1	Hatched.
"	Hen on raised nest	16.7	"
"	Hen on board and straw nest	14.3	"
"	Hen on earth nest	21.1	"
"	Machine No. 3	24.7	Fully formed, dead—a deformed chick.
"	Machine No. 2	22.6	Hatched.
"	Hen on rubber nest	15.5	"
"	Hen on ground	12.9	"
"	Machine No. 1	11.3	"
"	Hen on ground	14.4	"
"	Hen on ground in doors	17.5	"
"	" " "	15.1	"

Mr. GRAHAM: This chart was designed to show the individuality of hens, in the evaporation of the egg content, and in the hatchability of the eggs.

The eggs from hen No. 5142 are low in evaporation. The four eggs were all set in machine No. 1. This machine has a moisture device, and we were using as much moisture as we could. Some would say we were trying to drown the chicks in the shell. Chicks hatched from this hen's eggs with an evaporation varying from 5.9 to 8 per cent. I might add that 5.9 per cent. is the lowest evaporation we found in any egg during the season.

Hen No. 5905 lays eggs which evaporate on the average more than do in the eggs from 5142. The eggs from No. 5905 are a good illustration that the evaporation is not the cause of fully formed chicks dead in the shell. We find here eggs with an evaporation of 7.9 per cent. and 8.9 per cent, with fully formed dead chicks in the shell, while eggs with an evaporation of 8.3 per cent. and 8.4 per cent. hatch.

The eggs laid by hen No. 234, hatch under a wide range of evaporation, and it will be noticed that her eggs were set in many machines and in nests of different designs. Her eggs hatched with over 100 per cent. variation in evaporation, as is shown in No. 6 incubator, where the eggs hatched with an evaporation of 8.3 per cent., and in machine No. 4, where the evaporation was over 17 per cent.

We will next consider hen No. 50. She would lay about six eggs a week, and keep at it a good portion of the year, but we had difficulty in getting chicks from her—on the average, about four chickens from thirteen eggs. Practically all her eggs are fertile, and each egg has an individuality of its own. Under a hen on a raised nest the evaporation is 23½ per cent. of the hatch; or, when we hatched these chickens from her eggs, we practically lost a quarter of the egg content. There are three of her eggs under one hen, sitting on the raised nest. Each egg has a different evaporation, and if the evaporation influence the hatched, the eggs with 14.5 per cent. and 14.2 per cent. should have both hatched; but the result is one chick and one fully formed dead in the shell. Then, taking the hen on the ground outdoors and 11.6 per cent. hatches, 7.3 do not, 7.2 die. This hen did not consume enough oyster shell to make proper shells on her eggs. We had to feed her egg shells in order to get good shells on the eggs. We find that a great many of the hens that have oyster shells do not get enough lime.

Mr. RICE: I have heard of them taking the oyster shells away from the chickens to make the shells weak, so that the chickens could get out.

Mr. GRAHAM: Here is a hen—No. 7099—that has an individuality of her own over and above any other hen on the farm. She was a regular machine to lay, and her eggs will hatch under almost any condition. Her eggs are large evaporators; they will evaporate more than any other eggs, and yet they turn out chickens. If it was possible to state that a certain percentage of evaporation was the proper percentage to go by in order to get a good hatch, the wide variation in evaporation of this hen's eggs alone would upset the theory. You can follow her here down the column, and see she turned the trick at 100 per cent. difference in evaporation. She hatched chickens here 11.3 per cent. evaporation. The egg was set right alongside of an egg from 5142, with an evaporation of 5.9. There is 100 per cent. difference in the two eggs in the same incubator. Chicks hatched from her eggs at 11.3 per cent. and at 22.6 per cent. of evaporation. The egg set in machine No. 3 had 24.7 in evaporation, and the chicken was alive when we broke the egg, but it was deformed. There is only one egg which we got from that hen which failed to hatch. This one had 19.7 per cent. of evaporation.

Mr. RICE: What is the evaporation—the loss in weight—of the egg shown by how many weighings?

A.—Four weighings—on the fifth, tenth, fifteenth, and eighteenth days.

Q.—This is simply the total amount?

A.—The total amount of evaporation. If you had 100 pounds of eggs in an incubator, and if you take the average of the hens as the proper amount of evaporation, you would require to lose eleven pounds. We calculate that an egg weighs two ounces in the beginning; at the end of eighteen days it has lost 11 per cent. of what it weighed at the commencement. I have not seen any great difference of evaporation between the fertile eggs and the infertile eggs.

Mr. NIX: I weigh the eggs in grains before they are put in the incubator and mark the weight with pencil on the egg. You can in this way go along and test as much as you like, and take the same egg on the eighteenth day, and you have the same thing with that individual egg.

Mr. BALDWIN: I have a letter from Mr. Wagner, and he said that Du Risque wrote on moisture, and gave 102 degrees as the maximum heat for normal incubation. Bear in mind, however, that his eggs were applied to a uniform heat all around, so that 102 degrees probably reads the temperature in the center of the egg as well; and Dr. Wagner states that in order to get this temperature he had to get the heat on top to 104 degrees.

Mr. DONOVAN: Is that in contact with the egg?

A.—Yes, to produce a temperature from 101.2 to 102 degrees.

Mr. NIX: Did he take any test for the germ temperature?

A.—He said that could not alter it.

Mr. NIX: In the first three or four days there is not any blood circulation.

Mr. GRAHAM: Take the machine that you operate at 104 degrees, and I can give you results off hand of a hatch. One machine at 101 degrees hatched 65 chickens five or six times in succession out of 110 eggs set, but the same make of incubator in the room, when operated at 104 degrees, only hatched one or two chickens. There was a slight difference in two incubator cellars. Better results were obtained at high temperatures when the machines were operated in cool cellars.

Mr. Donovan: Do you infer from that last hen that the hen that lays the most eggs gives the biggest results in chickens?

A.—Oh, no. But I will tell you we are getting some interesting things as we follow along. We have some hens that are phenomenal layers, in that nearly every egg from them will produce a chicken. We have a hen that laid last year in seven months 110 eggs. I set about sixty of those eggs. They were all fertile, and no matter how I set the eggs, I would get a chicken that developed up to the eighteenth day; but I never got an egg to hatch. Hens that laid eggs that would not hatch last year are laying eggs that are not hatching this winter, and hens that laid eggs last summer that hatched are laying as good eggs this winter.

Mr. Donovan: I asked you that because the general supposition is that the hen that lays the most eggs will give you the least fertile chicks, because they are forced?

A.—I doubt that.

Mr. Donovan: What quality of chickens did you get from the last hen?

A.—They appeared all right. We hope to duplicate this work this season, and we shall endeavor to keep a record of each chick, as to its mother and the method of incubation.

The only comparison between wet and dry chickens that I can make is that the one appears full and plump, like an apple just pulled from a tree, whereas the dry chicks look like the apple that has been left exposed to the air for some time and is beginning to look wizened.

Mr. McNeil: Don't you find a chicken that is hatched about from the nineteenth to the twentieth day, no matter how they are hatched, are all right?

A.—No; the best chickens we have ever had to live are the ones hatched in twenty-one days. I found in operating the incubators that when I could get an egg to hatch in twenty-one days it was all right.

Mr. McNeil: A hen won't hatch in twenty-one days if she hatches right?

A.—We set about eighty hens and only two hens hatched under twenty-one days. One hen did not hatch a chicken for twenty-three days, and then she hatched 100 per cent.

Mr. Donovan: Were they good chickens?

A.—No.

Mr. Brown: From your opinion you have come to the conclusion that fertility has nothing to do with the laying capacity of the hen?

A.—As far as I know it has not.

Mr. Brown: That is the conclusion I came to.

Mr. Donovan: You said you did not care much about the size of the air space; you would qualify that with the minimum and maximum?

A.—Yes.

Q.—What is the maximum?

A.—I would not want eggs to evaporate more than 18 per cent. I did my best with three incubators to drown the chickens in the shell. We used moisture in the bottom and on the top, and the moisture was running down the sides, and that machine hatched exactly the same percentage as the one beside it running dry.

Mr. Black: How about the air that you passed in the machines?,

A.—The ventilation was the same, neither one given any special ventilation.

Q.—Did you get a good hatch?

A.—We got 80.2 in one, and the other 80.1 per cent.

Mr. BALDWIN: What time of the day did you take the temperature?

A.—Three times. We were guided by the morning and evening temperatures. In the middle of the day they would run up occasionally. Sometimes we took them oftener than that. Most of us that were running the machines lived for six months in the incubator room or in the field with the hens. An incubator thermometer sometimes hops up. I would rather see the thermometer go down than up. When it goes to 98 it does not worry me, but when it goes to 105 it does.

Q.—Do you open up the incubator to cool?

A.—Eggs are cooled on top of the machine or on a table.

Q.—What is the result if you operate an incubator with one of those wire gauze thermometers and determine the temperature with that?

A.—We have not used the thermometer in this way throughout the entire hatch, but have used it for a portion of the period.

Mr. NIX—What results?

A.—Results were all right with the wire gauze egg. The egg near its top registered 101½ degrees.

Q.—I should think you would get a different temperature where the thermometer touches the eggs?

A.—It is practically the same.

Mr. NIX: With the thermometer under the hen, it shows practically the same temperature from start to finish?

A.—It did.

Q.—It does not follow that the eggs under the hen were hotter than what was indicated in that thermometer?

A.—All we got under the hen was the air temperature.

Mr. NIX: Why is not that the right way to take the temperature in an incubator?

A.—I think that would be all right.

Mr. GRAHAM: We had some clinical thermometers for the purpose of taking the temperature, and we found them to register from 91 to 107 degrees. One hen that was the warmest on the top of the eggs was the coolest on the bottom.

Q.—How do you account for that? Do you mean on the same day?

A.—We had two thermometers in the nest at the same time—one 107 degrees and the other 91 degrees.

Q.—How do you account for that?

A.—I do not know how she did it.

Q.—Would every egg in the same machine indicate the same temperature?

A.—Yes, for the first week; but after that every egg has a temperature for itself.

Q.—How many degrees difference?

A.—I have had them vary about two degrees; that is where the advantage of a hanging thermometer comes in; after the animal heat in an egg begins to develop the temperatures vary.

Mr. DONOVAN: Suppose you reverse those eggs and take the eggs at the end of the machine; will that change the temperature of the individual eggs coming in contact?

A.—No; it did not. We marked some eggs under a hen and tried to watch how she turned them, and some of those eggs if you looked at them five minutes after, were in a different position; but one egg she never moved for four days; that was at the back of the nest.

Mr. BLACK: How did that hatch?

A.—She hatched them all.

Mr. Black: Do you know whether that one lived or not?

A.—I do not. We caught a hen laying out in the field, and we weighed the individual egg, and when she laid sixteen eggs she went broody, and we weighed the entire eggs and she sat on them. We took her temperature and humidity and carbon dioxide and everything, and we tested the eggs, but not one was fertile.

Q.—That proves that when she steals her nest she does not hatch chickens?

A.—She did not lay fertile eggs that time.

ORGANIZED AIDS TO AGRICULTURE.

By G. C. Creelman, President of the Ontario Agriculture College, Guelph.

It is always a privilege and a pleasure for me to have the opportunity of welcoming a new lot of agriculturists to the Ontario Agricultural College. We have so many and diversified interests represented at the College now through its various departments that, whether it be school teachers, poultry men, sheep men, or cheese men, or who ever they may be—in what ever activity of life they may be engaged—we are always pleased to see them here, and we are complimented that they find something here to interest them, though they come from the town or city or from the country.

I thought that to-night I would not dwell on the work of the Agricultural College, for the reason that I spoke on that subject when you were here before, and I knew there would be a number of our students present who would know as much as I do about it; and I thought I would not take up their time in listening to me on the subject they are familiar with; and while I shall say some things about the College, I want to speak more particularly on the organized effort in agriculture in the Province of Ontario. We are "the backbone of the country," as the politicians say, as they travel around the country just before election time; and I want to know to-night whether it is true—in this day of Cobalt, in this day of Yukon gold, and fishery wealth—whether the farmers are the backbone of the country. There are four natural sources of wealth in this country at the present time. There are first, the fisheries; second, the forests; third, the mines; and fourth, the soil and its productions.

The fisheries, important as they may be, we must pass over, because they are a small part as contributing to our national wealth.

We might speak a whole evening upon the subject of the forest. These forests of Canada are the most important asset possessed by any country on the face of the globe. The Scandinavian Peninsula and the Dominion of Canada are the only two countries of the world who have "wood to burn," to use the slang phrase. They are the only two countries that possess more wood than the people are able to use themselves, and while there are other countries exporting wood, they must import another kind to take its place. Having this forest wealth, we have a source of revenue which we will do well to husband a good deal better than some of our Legislatures think necessary. I want you from this time on, when you see articles with reference to timber, to stop for a moment and think how lumber has increased in price, and you will come to the conclusion that our timber interests and the lumber interests are very important. Our own carpenter astonished me this afternoon

when I said I wanted a particular piece of work done. I said: "We don't want dressed pine or dressed oak for that job; it is too expensive. Buy ordinary hemlock," and he said, "Do you know that ordinary hemlock costs $4 a thousand more than it did this time last year, and it was $5 a thousand more last year than it was the year before that?" In Ontario there are millions of feet of this timber lying on the ground, and the bark alone taken off and shipped to the tanneries. Up in Simcoe, Muskoka, and Parry Sound, all through that country, millions of trees were cut down during the last twenty years, the bark was peeled off and taken away, and the trees left to rot. Aside from that, Canada is doing much for her timber and lumber condition, and I saw only to-day in the paper called *Canada* that thirty million dollars were now being paid out in wages in the timbering and lumbering industry of this country.

The third national asset I mentioned are the mines, and you have that product in mind, especially those who come from the large centers—Montreal and Toronto or Ottawa, where the Cobalt fever has broken out, or, I might say, set in—because so many persons seem to have gotten that disease, and it has grown worse and worse as days go by, till now some are past redemption so far as getting back to legitimate business matters is concerned. In Ottawa, more particularly, we find young men quitting business and going off to Cobalt—even quitting the Civil Service, a thing that has rarely been heard of before—so wild are they about that new country. And so the mines in Ontario, particularly at this time, are a great source of national wealth. But the mines and the forests and the fisheries are all exhaustible. The forests must be replanted, the mines cannot be restocked, and the lakes must be supplied with fresh fish if you are to keep up a constant supply; whereas you can go on, year after year, cropping your soil, and, as a matter of fact, in the Province of Ontario to-day we ar producing more bushels of oats and more tons of hay on the same acreage than ever before. We are selling more cattle and selling more grain per hundred acres than we did when it was cleared a few years ago. This is true, and it is for that reason that I wanted to tell you to-night something about the agencies that have been instrumental in bringing about this state of affairs. It is a remarkable thing that the average farm throughout the length and breadth of the Province produces more than it ever did before, by virtue of better methods of cultivation, by the careful spraying, picking, packing, and handling of our fruits, by the growing of better grain crops, and by the knowledge of what animal to put in to eat up those crops to better advantage, etc. And so during the last five or six years we have completely doubled the output of the ordinary farm, while in the United States and other new countries the condition of things has been entirely different. In wheat the average yield per acre is less than thirteen bushels throughout that country, and in Canada it is about twenty bushels.

I want to dwell upon one or two things that have helped in this development. I might first, very modestly I hope, take credit to the Ontario Agricultural College and the Experimental Farm on which this College is located, for some credit for these results that I have briefly enumerated. I want to say to those who are not familiar with the College something about what we are doing. In the first place, for the boys we have a long course and a number of short courses. Any student may come here and stay two weeks or four years. If at the end of two years he must leave, arrangements are made that he can get a diploma showing that he has a practical knowledge of those things that we teach. If he can stay longer, or by virtue of the fact that his people have retired and moved into the city, or for other of a dozen

reasons, he finds that after the two years he is not wanted at home, he stays on two years longer and take his degree. So, out of 100 boys about 80 out of the first year come back. For our third year about 60 per cent. return. A number go through the four years because they think two years is too short a time to master the great science of agriculture

You cannot tell in farming what it is going to cost you to raise a bushel of wheat or what it is going to cost you to take off a ton of timothy, because you do not know how much nourishment is taken from the soil or how much has been retained in the soil for the next year's crop; whereas in business the manufacturer of a wagon, when he knows the price of hickory, knows the price of iron, and knows the cost of labor and knows what his plant is worth, can tell exactly to the cent what he must sell that wagon for to make decent interest on his investment. He knows that in advance, because he buys everything before he makes up the implement. On the other hand, the farmer has to work more or less from hand to mouth, in the dark, to a large extent. He has to go along the line of general principles only; but fortunately agricultural science has developed to the place where certain well defined rules have been laid down, which, when followed, will bring about certain results; and so it will need to be thrown back upon Providence and dry weather in case he does not get a maximum crop. Certain broad principles, certain common sense rules, have, however, been laid down in farming; and because we cannot control all conditions there is more reason that a boy who is going through for two or four years must get as far as possible a thorough grasp of all the known conditions so that he may control them, as far as possible, and thereby direct his farming operations along such general channels that general results may be expected. In addition we have a short course in poultry husbandry, which has been so successfully conducted here. There is a short course in seed and stock judging, where we had 300 students; some old men over 60 years of age come for two weeks and take in the judging, so that they may keep pace with the times and know as much as anybody in their locality in reference to the business in which they are engaged. There is a longer course in dairying, and we have forty students this year who are preparing themselves especially for the business of dairying, the milk supply, and the butter and the cheese as manufactured in our factories.

We have also a class for girls, and I want to dwell upon that more particularly. You will all have the privilege of going through Macdonald Institute and Macdonald Hall. We do hope, as the years go by, to take from the farm homes an increasingly large number of girls, who will come to the Institute, where there are no frills and flounces, and where we confine our time to teaching useful things, the three things which the girl must know if she is ever to be a housekeeper—how to cook, how to sew, and how to do laundry work. Those three things she must do, poor girl, all the rest of her life. No matter in what station she may find herself, one or two or all three of these things have to be done every day by our women. So why should not our girls be taught them from the first? Housework becomes very monotonous if not done well, and if things are not in shape they cannot be done with the best methods. They can be done with so much more cheerfulness if the girl knows the right methods. Macdonald Institute is the place for all sensible girls to go to learn to do those things in the shortest possible time. We have a short course of three months for girls, which costs $60, and a longer course for housekeeping for nine months, costing $180. During that time they can learn something else, perhaps chemistry and perhaps biology, and so become better informed women, who have a broader understanding of the whole principles of housekeeping and home-making. The

two years' course is one of the most important, because it has a future bearing on the life of many persons. That is our two years' course in Normal work—training teachers for domestic science subjects. I have no patience any longer with the trustees of our ordinary schools who do not rise up and insist upon these things being put in the rural schools and the town schools' curicula. I have no patience with schools that will not put in manual training for the boys, the general knowledge which goes to make a person familiar with the things immediately about them; and for the girls, as small as you can get them, just the little tots, just as they are fond of their dolls and dress them and are kind to them, so they will take just as naturally to the work of domestic science. Good men and good women have given their word that it is successful in their schools, and I have no patience with the schools that do not take it up. We prepare teachers with two years' training, that they may be able to go out into the schools and teach these things to the child when the child's time is not worth very much. The children become very important citizens when they are big enough to do a man's work. It did not use to be so. It used to be you could hire a woman for 50 cents a day and a man for $1 a day; but now we pay a man who has no special knowledge of the work—an ordinary man—$2 a day, and scrub-women $1 a day. And so I say that things of practical value, particularly for girls, they must be taught while still in the public school. Those things, if they are going to get them at all, and if they want to reach the great body of our men and women, must be gotten at when they are young, when their time is not worth very much.

The second item I will mention is the Experimental Union. That is an organization composed of ex-students and affiliated with the department of field husbandry. They have 4,050 agriculturists, farmers on their own farms, who are conducting experiments and sending their results to Mr. Zavitz, so that he can tell what is being done in the Province and what may be done. That is a very important branch, and it has had the effect of strengthening our work throughout the length and breadth of this land. These 4,050 farmers make up an army of agricultural soldiers who, in their own townships, are doing something to leaven the lump, and increase not only their own crops, but, by virtue of example, are informing their less fortunate neighbors that something may be done to increase the yield of farm crops by better seed selection, by planting other varieties than those they are growing, or by changing their methods of cultivation, as suggested by the Experimental Union.

I might say that the Agricultural College spent last year the sum of $129,042, the Experimental Union $2,500 in their particular work, and the Farmer's Institute, in the year 1906, spent $26,812.

There was a time when the professors of this College did all the Farmers' Institute work that was done. It simply meant that the farmers met together in school houses or township halls or in a little room by themselves to thresh out those subjects in which they were most interested. The movement started by a few of the professors of this College in 1885 going out and giving talks to the farmers, and all those that came were benefited to some extent, but they found out that there was such a demand for these meetings that they would not have time for their own work at home. Last year the Institute held 800 meetings to which the Ontario Department of Agriculture sent special speakers on special topics in which the farmers were interested, and so there are Farmers' Institutes all over the country and they are holding meetings to-night in Grey, Oxford, Wellington, Simcoe, Glengarry and Stormont, and all over the country. Every year these meetings are being held over and

over again. They have been doing the direct work of carrying the good news to the people. No one agent has done so much to take information to the people and give it directly by word of mouth than the Farmers' Institute, and they have done so much to bring about the improved condition of things on the farm that we find in the Province of Ontario to-day. There are also live stock associations, such as the Horse Breeders', Swine Breeders', Cattle Breeders', Sheep Breeders', Shorthorn, Hereford, Galloway, Jersey, Ayrshire, and Holstein, for with the dairy cattle we get down to individual breed associations. So live stock, from the horses down to the pigs, have been very important, from the fact that, notwithstanding how much this College or this Farm may have done to increase the bushels per acre, it would be all lost were it not that another class of individuals—the live stock men—have been breeding and distributing a class of live stock that will take this food that has been produced and make of it the highest proportion of high priced meat. That is why many times when I have been asked by students why in the fourth year we cannot have an agronomy option and a live stock option, I fight shy of that, because I do not want to turn out specialists in one thing when they should know something also about the other. I believe that every student graduate from the Agricultural College in agronomy should know not only how to grow the feed, but also how to select animals of the breed which will sell for the most money.

Another branch in which I am not very clear as to the far-reaching effect for the money spent is that of our Agricultural Societies or Fall Fairs. The Government spent last year $95,000 in cheques sent directly to these fall fairs, that they might hold the exhibition where the farmers may come in and see the very best of everything shown in the very best style, and put in such shape that they will go home and say, "I have seen something to-day that I am going to try and imitate." If the exhibits were always true, it would be well, but too often the boys go back and say, "Look here; I will have to sell our horse; it is too slow. I saw a horse travelling at 2.30 down there, and that is what we must have here." Hard-headed farmers' boys don't say that, but yet if they just see the horse race and nothing more, they are not very much elevated; and perhaps the horses in that race were old skates brought in from some city for the purpose of carrying away some of that $95,000 that was given by the Government, and some people say that the $95,000 is not spent to the best advantage. In some places the money is spent to good advantage where they have an entirely educational exhibition, and where some of the directors go through the country between fairs and stir up the farmers to make a good exhibition. The fall fair should be an occasion also where the farmers can meet together, put down their reaping hook, and put down everything they are doing and go and meet their friends at the fair grounds, and there they see the best product of the field and the garden and the orchard, and then go home after visiting their friends and say that the visit was well worth the while if it was only for the social intercourse.

Probably one of the most important items of expense last year in connection with the Department of Agriculture was the sum of $53,200 spent for dairying work. That is a lot of money, and some of you men may be surprised to find that the Dairy Department spent $53,200. In all lines of progress dairying has leaped to the front, and has made a reputation for Canada in the markets of the world. When I say that three of our products —butter, bacon, and cheese—in 1906 brought more than $40,000,000 in hard cash for the farmers of Canada in the markets of the Old World alone, then $53,000 for instruction looks small. I want to tell you what has been done

in the last year or two. It is not easy to keep our products A1 in competition with the markets of the world. A few years ago the people would not eat our cheese. We made some good and some very poor stuff, but to-day we make practically no inferior cheese, and I think Prof. Robertson and our Provincial Dairy Schools should be given the credit for starting this new movement. When he became dairy expert for the Dominion of Canada, Prof. Robertson advocated instruction in cheese factories everywhere, and now we have about 1,500 cheese factories making cheese in the Province of Ontario alone. After a time it was found that they were going back a little in some places; some flavors seemed to get into the milk, and we were just afraid that something might happen to the cheese industry. Ontario then hired men at $75 a month and $100 a month, and put thirty-five of these men out, expert dairymen, men who simply took a horse and buggy and drove around from factory to factory and tried to check anything that looked like improper methods of cheese making. They gave instructions, and went into the factories and helped the cheese makers make their cheese and showed them how to overcome difficulties. They went about on the lookout for injurious flavors or anything that would cause our cheese to get a bad reputation abroad. These men are acting in your interests and mine, because if anything should happen to the cheese industry in this country, Ontario would nearly go bankrupt. You cannot take $30,000,000 out of this Province and drop it into Lake Ontario without putting people out of business all along the lines; and so it is most important that this money should be spent for these purposes of instruction. The Province of Ontario spent for agriculture last year a total of $445,000, voted directly by the Government for the upbuilding of agriculture, and to help your people to bigger things, and yet I think we are getting, as a Government, good interest on the money when our annual output has gone up in the last twelve or fifteen years from $150,000,000 to nearly $300,000,000. That is the value of the farm products each year from the farms of Ontario alone. Well may $100,000 be spent if it is going to bring $5,000,000. I have taken time only to mention a few factors that have contributed to bring about these results. Many other agencies have helped very materially, the more intelligent interest that is being taken in poultry culture being one of the most noticeable.

Farm buildings, the farm implements, and the farm live stock are now valued by the assessors in the Province of Ontario at more than a billion dollars. Hence I say, in conclusion, we are in a business in which we need not be ashamed, because it is the biggest business in one of the best favored lands under the sun.

Mr. Baldwin: I know we have appreciated very much the interesting remarks that have been given by Mr. Creelman, and they ought to make us feel proud of the Province we live in. There is a great deal of truth in what President Creelman has said with regard to the agricultural interests in the Province. I know it has occasionally been my duty to travel through the country districts, and it seems rather pathetic to go through the farming districts and find the farmers growing old in years, and you wonder where the young people have gone to. They are suffering there for the want of real assistance, and the young man is attracted to the city, or possibly to the great west, where the excitement in the great wheat growing country is attracting them, and one wonders a bit what attractions has the city against the country. After all, I think there is really no comparison. We know that the profession of the farmer is a very high one; there is no profession that can beat it, and the Agriculture College, I am sure, is doing a great deal to improve those farming conditions of the Province. I think a great many

young men are attracted to the cities because of city life; but if you can get the young men interested in the improved farming conditions they will not then be attracted to the cities. I am sure the Agriculture College has done a great deal to advance agriculture, and so it should attract our young men to stick closer to the farms. There is no doubt in my mind that a great deal of difficulty has been on the social side of farm life—that the life had not been as sympathetic in domestic economy as it should.

The work that the Macdonald Institute is doing is going to revolutionize the farm life. It will make the farm life happier for the girls and young women, and happier for the young men. With improved sanitary conditions, introducing water with proper drainage so that you do not have to pump at the well; with the opportunity of having gas provided in your house—all these advantages, together with the teaching of domestic science, will help to make farm life more pleasant. As a poultry man, I would like to say that we appreciate very much Prof. Creelman's very sympathetic interest in our work. We appreciate the interest shown in the way he is aiding and helping in the practical experiments that are being made by his very capable lieutenant, Mr. Graham, and I want to say to them publicly that we appreciate very much the time and energy they are spending to help us out of these difficulties, and we wish them every success. I am sure that the interest and intelligence that they show, and the perseverence they have given to the work, will solve some of our problems for us.

ILLUSTRATED LECTURE.

By J. E. Rice, Cornell University, Ithaca, N.Y.

The following remarks are taken from running comment made by Mr. Rice upon stereopticon views from slides carefully selected by him as being of practical interest. He said: I have a good many slides this evening, and therefore will have to pass rapidly over them rather than take much time in discussing them. This first slide represents the brooder indoors, which Mr. Cyphers and Mr. Nix spoke about this morning. It was a photograph taken on Mr. Cypher's model farm, and shows the different tiers as they were arranged. In the first house he built he had five. He has since changed it, so that there will only be three. The new plan is to make these a little higher, giving the larger runs for the chickens as they grow older, thus mixing together the largest possible number of chickens within a limited area. It worked all right for a short time, but it is too cramped, and they are kept too much in a sameness of temperature for their good.

The next illustration represents a type of raising poultry by the outdoor system of individual brooders, and was taken on one of the large farms in New York, where a man has been successful in raising chickens this way. It does not appeal to me in the way he is using it. He has all the yards divided off and the brooders in an individual yard with high fences, making it a fixed affair, and it always seemed to me that one of the great weaknesses in our methods of raising chickens and keeping poultry has been that we have tried to keep them on the same land too continuously. I believe they should be moved to new land every year. This pretty nearly fixed the thing, and I believe they have been there for several years.

The Chairman: What time of year?

A.—They stayed in that position the year round. I was visiting with a class before the snow came on, and they shut the winter conditions out. In

front you find a little shelter. The feeding is done at a point where it is shady, and the chickens come there. There is a multitude of work attending upon opening and shutting the gates and passing from one place to another with so many brooders with fifty chickens in.

This is a picture taken on the model poultry farm a few days after they moved from Wayland, and represents one of the types of brooders scattered among tht trees in the grass, giving the chickens the natural conditions that art necessary for vitality.

This shows a little different plan, where the chickens are running in a large park, and at the time the picture was taken they were raised on these little brooders, and we began to use a kerosene heater in these hovers, with fifty chickens in, and found we could keep two hundred chickens there as well as fifty. We built a colony house 6x7 feet, and now we are building them 8x8 feet. Another picture will show the same orchard four or five years later, the size of the trees, and the number of the houses with the kerosene heaters. We sold $500 worth of plums off that orchard.

I am showing you a series of views of keeping poultry. I think it is essential to have the sexes separated early, and have the males in a place by themselves and cull off; keep the best for breeders, and give them the best range they can get. Here is a fresh air house and colony house, from which the chickens are taken to and from the brooders and brought over here when they are able to get along without any heat, and these houses are arranged on a large area. The chickens are placed in there long enough so that they become acquainted with it, and after a few days they will know their own house and come back from the common park. This was taken on Mr. C. H. Wycoff's farm. This works very successfully, and I noticed that this last year he has modified his plant and has moved those brooders from the fence.

This is a picture taken on the Cypher's incubator plant, showing the types of houses they are using for the same general purposes. It seems the houses are too close together for the purpose they were intended. The colony houses ought to be far enough apart so that they can get the benefit of a colony plan.

This was taken from the Gidney farm at White Plains, of which Mr. English is the owner. This is where a very wealthy man makes his money out of some corporate interests and is spending it in wealthy farm living. He is raising everything in the very best way, and he has means to supply everything. His eggs are shipped to his yacht every summer.

This is taken from one of the large plants in the States showing the type of building, which it seems to me is costing rather too much. It is Mr. Kellar's building. He never had told me what they cost. He has led me to believe that the cost was between $4 and $6 per hen capacity. The houses are extremely large, but the windows are rather small. He has elevated his house two feet on a stone foundation above the ground.

Q.—Is the air sufficient for the pressure?

A.—Not enough. He has stuffed it with straw, and he has rather an extensive roof.

Q.—What is the object of the stone foundation?

A.—He did not want his floors to rot. He had board floors. He sold the whole thing out to a most excellent advantage for cash, and after two or three years came back to the poultry business and picked out a situation which was very fine in many respects. He, however, provided for the mistake he made in the old houses, where he built them near the ground with

hemlock floors, and after six years they were not safe to walk on; so he built these up with that purpose in view.

Do not have too many fences for hens. Give them a good run and they will come back to their own places.

This is a picture on a farm where, instead of having fences, five or six hundred chickens run in one apple orchard, and at night they all go back into their own particular pens. They are in pens of thirty-five or more.

Q.—Do you discover any serious difficulty in crowding?

A.—No, we never have; and we have never found any difficulty with the hens getting mixed up. I must say we made a mistake in building that plant that way. These houses are all too close together, and the hens are in a flock of six hundred; it would have been wiser if we had placed the houses twice as wide apart.

Q.—How wide?

A.—Fifty or seventy-five feet, and we did not have a system of double yards. I believe that with a commercial plant there should be an opportunity to change from the north to the south or east to the west, giving the land an opportunity to grow some crop. If there is one thing that has worked to the detriment and failure of the poultryman generally throughout the country I believe it is congestion of the poultry business on a limited area. If I were to start to-day I would never make that mistake again. They ought to have more land and keep the hens off one part till it is rested up.

My partner built that house since I moved to the farm, and it cost him 75 cents for each hen capacity. There is no glass, which I think is a mistake. There is all oilcloth there, but quite an opening for the sunlight to pass through. The foundation is of stone, then all over we have an interior of stone walls, and there is a cement floor inside and cement over the top of these stones as they are laid in there. There is only one thickness of boards, and that is hemlock, and the framework is made of oak that was sawed out in various lengths. It was wood that was left from the building, and in that way he got a cheap house, and he says he is getting excellent results from it.

Here is a picture of one of the famous poultry farms in Connecticut. Mr. Tillinghast is a man who does not know how many hens he has, nor does anybody else, and how much he makes he does not tell. His methods are so revolutionary in their nature that I would not think of recommending them. I think he could get better results if he did his work a little more carefully. He goes to the far extreme of economy in labor, and to the very limit of danger in the matter of neglecting things, and yet his only one hope of success is the fact that his houses are so loose, as well as his methods, that his hens are living in the natural conditions as much as they can and still be owned by man. I do not want to go into details there. I do not think he cleans out more than once a year. He starts in to clean one-half the house one year and the other half the next year. He feeds practically only two things—one is wheat screenings, which he buys by the car load, and the other meat scrap, with some corn.

Here is the Haywood poultry plant, which is famous in a way. I went a good deal out of my way and spent quite a bit of time and money last Thanksgiving Day to visit the poultry farm that claimed to have 7,000 hens, and when I got there I found he had nearly 9,000. He had more than was claimed; but his methods are more revolutionary in a way than Mr. Tillinghast, and he has these fowls scattered in about 700 houses. This shows only one colony.

Mr. Baldwin: Are those houses for the laying stock?

A.—He did not have anything else.

Q.—Any fences?

A.—Absolutely no fences; his hens did not run out at all. Mr. Haywood, of Hancock, N.H., is running this farm, and he is simply taking the cream of the poultry business, and he is using all the vitality there is. He says he is lazy. He is shrewd enough to let the other fellow take all the risk, and he takes the thing that has the least possible risk, and he is certainly making money. He has been at it thirty years.

Q.—Where does he buy the stock from?

A.—He buys from all over the east. He prefers Maine and New Hampshire stock from anything else he has got there. He has a house eight feet square, with nothing but wire in front; there is no cloth or glass, and he puts fifteen pullets in each of these houses. There is a water bucket, and they reach out through the wire to drink, and he feeds the hens with the hopper. He has one box with soft food and grain and oyster shells, charcoal, and meat scrap, and he keeps it by the hens all the time. He buys the hens at 13 cents a pound alive and puts them in there, and keeps them there till one year has elapsed, feeding them green feed in the summer time, but never letting them out; he gathers the eggs and sells them; and in the fall of the year, along about September, when the price of live poultry is the highest, he sells out the whole bunch as fast as he can, cleans his house, and begins to get ready for the new stock. He cleans his house twice a year, and the hens look to be perfectly healthy. He says that he scarcely ever loses a fowl either by stealing or by death. None of these houses were locked, and they are scattered a mile and a half in one direction and a half in the other.

Q.—Why not put those houses close together?

A.—He says he has experimented, and he likes them better that way. They are all a certain distance apart; I think he said fifteen feet. Most of his houses he has shingled, and on some he has used galvanized iron. He has galvanized iron eave troughs that collect the water and bring it down to this trough; he has another trough that he fills with grain.

Q.—Has he any particular breed?

A.—No; he says he gets anything he can that is strong and vigorous.

Q.—What is egg production?

A.—As I recollect it, he gets no eggs at all till January. He told me he gets about 100 eggs per hen, or a little more than that. He sells the fowl for a trifle more than what he actually paid for them, and he has his labor for very little. I heard he was a novice in the business, but when I looked at him I made up my mind that he knew what he was talking about. He was a shrewd Yankee, with steel-gray eyes. He carried great lots of fancy poultry of different varieties in his days, and had been at it for twenty-five or thirty years. He has been winning in different shows, raising by the different methods of hatching and brooding; but he made a failure of it in the end, and he said that hereafter he was going to do the easy thing and let the people in Portland and in Massachusetts do the risky part of it. He forces the birds all he can, and then gets rid of them before they die.

Q.—He must have a good many men working for him?

A.—He has twelve men, and in addition to his hens he has ten thousand apple trees. Every farm he buys he puts out in apple trees.

Q.—I understand the normal mortality was 10 per cent.?

A.—The normal mortality was 2 or 3 per cent. I understand he lost whole shipments of hundreds of hens some years because they cannot stand his conditions. I asked him what kind of birds he liked to see come in, and

he said of all kinds of fowl he has ever seen he liked the Barred Plymouth Rock.

Here is an original type of a hen house. Over at Addison is a man by the name of Mason, and he built a house sixteen or eighteen feet wide, double boarded and divided off in pens fifteen feet deep, with doors that swing both ways, with a passageway through, and he found by opening these wire doors and letting the hens go visiting, having free range and coming back to their own compartments to lay, that he could get just as good production as he could when he had them separated in their pens. He succeeded with that house for two or three years, and then he built another one. In this house he has 500 Leghorn hens in one flock. Since I took these pictures the house has been burned down, and he has built on the foundation another house like the last. It has the same kind of windows on the north, and the hens working in the litter. Clear around the room is a steel trough, and the soft food is put in there. There are three tiers of nests and some ventilator shafts. The house is ceiled, and it is exceedingly damp. The doors will open and shut into the roosting compartments. Strange to say, he was afraid when he started in on that plan that the hens would drive each other out of their place, and he drove stakes in between each hen so that they should not crowd; but I told him not to do that because he would injure the birds.

There is one thing I would like to draw your attention to, and something we have been using for the first time and like very much, and that is the way to keep the roosting compartment warm, and not have to resort to the double dead air space, or have it too stuffed up with straw, and this is accomplishel by having the air pass up at these points behind the perches, having an opening in the plate, and the air passing up between the rafters so that there is a perfect circulation of air around and behind that center lining, thus keeping it very much warmer than it would be with the dead air space or having it stuffed with straw.

Q.—What is gained by not having that in a dead air space behind the roost?

A.—I have not seen this in use, but it seems to me to be reasonable. It does work if you make that tight so as to get a dead air space, and that air coming in is cold by coming in contact with outside boards. If you stuff it with straw it gets cold, too.

This is the front of the house. The house is boarded on all sides except the south, and for instruction purposes we had the student each have a pen. We decided we did not want one student going in another student's pen. The house provides for cloth, and there are glass windows straight up and down to throw the light up. I think a glass window should never be higher than six or eight feet at the top, but the north window should be high above the ground, to prevent wind from driving in and striking the hens. We keep the glass windows closed to let the sun strike in, and still the wind cannot drive through.

It is an effort to find out how to give a dust bath, without having the dust flying through the air all the time. A dust wallow is an essential thing, for we have found that hens without a dusty wallow will become lousy very quickly, but by giving a wallow they can become completely rid of the vermin. The wallow must be in a place that is warm and dry and sunny, so for that reason we put a lower sash in these glass windows before the house was finished. We prepared for this by making a frame at this point and sinking the wall into the cement floor about eight inches deep, and we could fill that opening up here, shovelling from the wagons; so you see we could do all the work from the front shovelling out and throwing in. There is a

wire in front of the window, and we can let it up when we like. On the outside there is an incline leading from the window down to the floor which covers it, and the hens come from a little opening in the curtain, so there is the least possible dust in the house, and there is less dust than if the wallow was in the ordinary doses. We had difficulty with the house being very hot in the summer, so we simply put this little opening at the top to let the hot air out.

Here is a raised house, showing the house on runners a foot high. I was opposed to it at first because it seemed that the chickens would have to run up too far, but I like it now, and the chickens have an excellent place to get shade, and another advantage is that the house is up so high that rats or any other kind of vermin do not find a place to get in. There is difficulty getting up into this house, because we raised the sill of the door a few inches above the floor in order to keep the older chickens from flying out.

We use these houses the year around, and each has fifteen pullets in it, and they have been running through the winter. It takes 5 cents a day to operate one of these houses with gasoline with 200 chicks in it. I do not like the windows. We have tried two or three methods to get the windows right. These windows let too much heat in in the summer. The window is fastened at the top and every time you open it up you are apt to break it.

Q.—Have you ever tried whitewashing the windows?

A.—We do that, but it looks bad.

Q.—Why not face the houses to the north?

A.—That is a good idea; another year we are going to try it and see how it works.

Q.—Don't you have trouble with having the laying hens in there in the summer time and the little chickens in there in the winter time?

A.—We would do that only we have not enough land at the University. This is where they are building the first "A" house out of shredded wheat boxes. We pay from 12 to 15 cents apiece for them, and a house eight feet square with four rafters will take three of these. Three shredded wheat boxes will cut to advantage, and with good roofing paper—red—for the top, it makes a good, serviceable house. Just to show you how people will take to an original idea, we thought we had got something there that would bring credit to the University on account of the small amount of material it took, and after getting it up and thinking it was an original discovery, we found that this man Henwood had been building them for thirty years up in New Hampshire.

This shows a house eight feet square, representing a trap in the floor holding the litter. The litter is lifted up and the trap comes down. We are using it this winter for egg production.

This represents the method of putting in the material. The University gave us the filtration plant. It is a copper building, with everything in it copper. It was formerly used by the physics department for carrying on their electric tests. It cost us $29 to move it and build it, and we have $150 worth of lumber from the transaction.

Q.—Have you any difficulty with the gasoline heater?

A.—We have changed the heater several times.

Q.—What kind of paper do you use?

A.—Red roofing paper. These chickens have a good, big range. If land would permit, we would have those colony houses on runners, and they could be moved without taking the chickens. The houses we had for surplus stock are entirely wire in front. We have a cloth curtain that rests up against the roof.

Here is another colony house and a much easier one to build. It costs a little bit more, but having the advantage of being a better house for the hens in the winter, though not so good for the chickens in the summer, for the reason of having to keep the gasoline tank there, and we must have it up high to make it work.

Q.—Do you find it necessary to keep the tank in the shade all the time?

A.—Yes, with gasoline. I think it was first suggested to me by a young man in Cornell University by the name of Graham. He said that he had used it, and he promised to come down and show how to make a heater; he did so, but his heater was a failure. We made a heater of our own, and the thing has gradually worked out. We started by having a one gallon oil tank, and it was in the sun and the oil evaporated; it went down in the pipes and put out our lamps, so we remedied that by putting it in the shade.

We have been running an experiment for three winters on the effect of glass or cloth windows. This is a section with glass, and the other is with the cloth. The other one was with one half cloth and the other half glass, and the other one without any cloth or glass —just a wire in front—and we have been keeping atmosphere records and sun records with seventeen brown Leghorn pullets in each house. The results up to date are complete with last year's work. Last year we got a good deal better production in the house with the cloths. This year we did not find any difference between the one with the glass and the one with the cloth. The houses that had the glass and the cloth have been better than the ones in the open. I saw before I came away the Chemist's report as to the moisture in the straw. We gathered up the straw from each of those houses, weighing it when it went in dry and weighing it when it came out wet. The Chemist's report was in this order: The first had by far the most moisture in it; the glass was next, and the half glass and half cloth was next, and the one with the wire front was a good deal drier than the other. We find twice as much sunlight in the house with the glass as we did with the one having cloth, and more in the one with wire than we did with the other two. The one with the wire gets even more sunlight than the ones with the glass. The actual difference in temperature between those houses is between 6 to 8 degrees, depending on the winter.

After showing illustrations of incubators, the lecturer proceeded: This is the first picture of the moulting experiment, and here is the first chicken that enabled Miss Nixon to be able to say that she knew where the first feathers came from. This is the way the feathers first develop.

This is the chicken that Miss Nixon used in trying to find out whether it is true that the wings of the sickly chickens grow excessively large in proportion to the bodies.

This is one of the hens that was put in diamond dyes, and shows how the feathers were molted at this point. This is one of the pullets that laid first; she laid about twenty-nine eggs, when she began moulting. This is the same hen, showing by the colored feathers the ones that were still left while the body feathers had pretty nearly all changed place. This is the same hen, showing that where feathers were moulted on one side the same feathers disappeared on the other side, and that the last feathers to be moulted are the primary feathers. At the close the feathers were growing in there up to November and December. This is a hen with the primary feathers; tail feathers gone, almost all the body feathers gone, and the new pin feathers coming in all over the body. This is not a natural moult. This is the same hen, held up to view, showing how the feathers disappeared on the body.

This is the picture of the litter in a house, and shows the retarded or starved hens, and over here the forced hens. Can you see that there are any more feathers on one side that on the other. These were dipped in the diamond dye. This is the picture of the straw on the floor, showing the retarded hen and the forced hen. These hens were starved four weeks, only given about half their usual ration, and these others were fed the same ration that they had been getting right along.

This shows a picture of the hen that laid the 225 eggs, beginning the 24th of January. She laid the first day the trap nests were put in, and continued to lay 225 eggs in the ten months.

Q.—Did you ever notice whether she had a big crop or a small one?

A.—Not very large. She travels on her record.

Mr. GRAHAM: She is a Dorking in type; long in the keel.

Mr. BALDWIN: You wouldn't say she had much posterior?

A.—No, but she gets there just the same. She is one of the long type. The food has further to go, and you get more eggs. This is the same hen; you see the new tail feathers going and her body feathers just coming in. Those are the primary wing feathers showing the diamond dyes.

Mr. GRAHAM: What are the best dyes?

A.—The purple and buff dyes or colors; the blues did not stay at all.

Q.—What kind did you use, the cotton one or the silk?

A.—I do not know. Miss Nixon knew more about it, and she got the ones she thought were the best colors.

Q.—Couldn't you dye the white chickens black?

A.—I think so. This is the grit experiment. The birds' runs were made so that they could get to the ground, and they were always hunting for something they could not get. This shows the hens eating the eggs. Roosters in it, too.

Q.—What time of the year was this?

A.—This was taken in midsummer; they were in the experiment about eight months. The experiment ran eleven months, and those hens ate every egg they laid.

Q.—When did you feed them? Did you feed them at all? (Laughter.)

A.—They were fed on grain and soft food, the same as the other hens, with the exception that they did not get oyster shells, and they were anxious to get lime to make the egg shell. They laid fairly well at first, and of all the eggs we put in the incubators we never succeeded in hatching one; the lime had injured the hatching qualities.

In pen "C," where they had grit, you would say they were in the lowest state of vitality at the end of the eleven months' experiments, notwithstanding that we found considerable fat on their bodies.

In pen "D" they had the powdered grit. The experiment was started for the purpose of finding out whether the grinding material was necessary or not, but we found that lack of lime spoiled that observation.

Q.—Did you incubate the eggs?

A.—We incubated the eggs in both pens, and we never hatched one egg out of the twelve started in pen "D." None of them died out of the twelve. We started and gave them grit, and seven out of the twelve died. They took five from each pen, and we left six pullets in this other pen that we did not kill. We took the same number to compare with the six we saved. From this pen that for eleven months had not any grinding material nor any lime at all, when we gave them oyster shells they picked right up; they began to lay, and continued to lay, and have never eaten an egg.

I took from the one pen fifteen of the fattest hens in the lot and the three leanest in the lot, and right under here shows the ovaries and the condition of the egg; there is an egg with the shell on, and the ovaries. Here are the three leanest of the bunch fed in the same way, and yet these hens had a little extra fat on their bodies, but they were lean compared with those that were extremely fat. I am not going to say that a person wants to keep a hen in an extremely fat condition to have her lay. If we want a good layer we must have a strong hen. The heaviest a hen is in her life is just before she begins to lay, and she gets light as she continues laying. You have heard it is possible for a hen to re-absorb an egg or the yolk of an egg after it was once in laying condition, and then not continue to lay. I do not think this is a positive proof, but it looks as if we had good reason to believe it. I find in almost all cases that when a hen is in a laying condition and is a good layer that the ovaries are shrunken. I have seen chickens with an ulcer on the liver. This is a simple coincidence in three white chickens. Sisters that stole their nests side by side, and the eggs incubated at the same day, and that hatched thirty-eight ducklings out of thirty-nine eggs.

Q.—Did you ever try those eggs in the incubator?

A.—I have never succeeded. This is a picture of the family of ducks out for a stroll, and they used to be together all the time. They did not associate with ordinary ducks.

This is Black Beauty on the day she laid her one hundred and first egg, beginning when she was 4 months and 6 days old, and has continued laying those eggs without skipping only two or three days at a time. The eggs are being weighed right along, so we keep the record. They weighed about two ounces. I think she deserved the credit of going down through history with the results of her labors at her side.

Let me give just a few statistics showing the relative comparison of value of the poultry produce in each State. The order in which the States run is: Ohio, Iowa, Pennsylvania, Illinois, New York, Mississippi, Indiana, and Kansas.

This is the result of a census we took, in order to find out what the different States were doing in poultry husbandry, and we are going to take it up in a committee to see just what is being done. In some big States, with poultry values in the hundreds of thousands of dollars, there is nothing doing in the colleges or experimental stations.

Kentucky is doing very little. Maine exceeds any other State chiefly in the matter of building stock and equipment. Nebraska has no poultry department; Rhode Island did not get the report in in time to have it put on the slide, and I had to estimate that. The State poultry buildings in New York are worth $6,500. I think ours cost $7,000 or $7,500. Maine has the largest, $9,400; Iowa, $7,000. They have twenty acres of ground devoted to poultry. Maine has thirty-five, and Cornell only two or three acres devoted to it.

In the United States there are over $500,000,000 worth of poultry and eggs produced every year, and only $75,000 are spent in assisting the industry. I think it is about time that the poultry men made it known that they have just as hard problems to solve as other branches of agriculture, and I want to say of the Directors of the Colleges that as a rule the men are only too anxious to do the thing that will be of the most value to their people. They are honest, hard workers, and painstaking men, and the only reason why they have not recognized poultry is because they thought a hen is a little bit of a thing, and they never begin to think how all the little hens all over the country could bring so much to them; and the only reason why

they have not carried this through as they have the dairy industry, or horticulture, or any other, is because they thought it could not be done successfully. There are a few of the States that are trying to work this problem as best they can. We have not begun to fully investigate the subject; we are only practising. But if a few of us will demonstrate that this is an important thing, and that it ought to be investigated, you will find that the States and Provinces all over will take this thing up carefully and carry it right through. (Applause.) I want to say that, so far as I know, two of the men who stand up the most in fostering this thing are your President here and Dean Bailey, of Cornell University.

This picture shows the boys doing the actual things. Here are the boys with the boxes of straw going round to the different houses in the winter time. We have something like forty or fifty bottles with the different kinds of feed in, and the name is written on the outside, and the student is supposed to be thoroughly familiar with the different foods. Then we put a pile of grain out on the table and take the bottles away, and ask them to write the number of the bottle and name the grain and give its composition. This generally takes two days for that; we then get them to sift the different kinds out and name each kind.

This is a picture of one of the classes taking the anatomy of the egg. The eggs are boiled in different conditions of fertility, taking the eggs that have been in the incubators and eggs that have been boiled, and make drawings.

We have coming to the University sixty-four different poultry papers, and they are put up for sale. Our students run this show themselves, and last year they sold $300 worth of these papers, and the profits of those papers paid for the whole show, buying the ribbon and everything and $20 left over.

We offer prizes for the best exhibition. We have ten breeds, and they select them without knowing which one they are going to be given. Then they draw lots, and must go to the pens and select for the exhibition two or three of those pullets, wash them, and fix them up, and the one that makes the best winning gets the five dollar prize. Then another five dollars is given to the student who makes the best record in poultry house plans—on the same plan that Prof. Graham offers a prize for making the best coops for the fattening of hens.

We are not beginning to meet the situation in New York, and yet you will be intersted to see how the progress of the work has gone on in the last four years that I have been connected with it. In the years 1905 and 1904 the total number of students registered was twenty-seven, the next year fifty-three, and the next fifty-five, and this year 77. This is an elective course. They did not have to take the poultry course; they just take two hours a day. The afternoon practice is thirty-eight days of two afternoons a week. The students do the practical work in the houses, killing the poultry, setting the eggs, and everything. The first year we had twenty-two, the next year forty-four, and the first half of this year forty-eight.

This next slide shows a piece of work that is very valuable, and that is making educational exhibits in connection with the fairs. We find it has got us in touch with a lot of people that we never had been able to reach before. This is a model of a hen house, the next is a colony house, and this other trap nests. (Applause.)

The CHAIRMAN: I do not know how we can thank Prof. Rice for the pains he has taken in showing us the interesting pictures. We all appreciate them very much, and thank him heartily. He has been doing a really good and sympathetic work.

CHICKEN RAISING.

By Wm. McNeil, London, Ont.

You want to know how I went into the business and how I got along. I remember the first chicken that I ever owned. I was tickled to death; it was a little pullet, and I said to myself, "I am going to start and raise chickens."

When I came out to this country I remember there was a firm by the name of John and W. Peters. They were our best chicken people at that time. I went to them and I got some White Dorkings and I got Golden Bantams. I kept moving on, and I got more and more. I want you to bear in mind that I was a shoemaker, and worked at the bench, and still had these chickens and looked after them. I was not like the boys now; they want all day to look after a few chickens. I felt that I would like to show some birds, but I did not go and buy. We had to breed them, and there was only ten or fifteen varieties. I remember my friend Oke and myself on different occasions going to directors and saying, "I will give you a cockerel or a pullet if you will get this variety on the prize list next year," and in that way we got them all on the prize list. We guaranteed to pay them half the prize money if they would put them on the list, and then we would get a good exhibit, so that we would have nothing to pay. In raising chickens I was very successful all my day; there was no luck about it.

Mr. Graham: How long have you been in the chicken business?

Mr. McNeil: Now, you want to get at how old I am. I have been in the chicken business forty years in this country. I was a little chicken man as a boy. I was 20 years old when I came to this country, and I have been in the chicken business for forty years. I started first to exhibit, and was successful, and went on till I got up to twenty-two varieties. That gives you some idea as to how a man has to hustle to keep twenty-two varieties. Those who know me know the success I have made with every variety, and we did not have the opportunities that we have to-day to go in the show, because now any of the boys can go in and buy and show and win. I do not think there is any disgrace in that, because we want them to buy and win and put the money into it. And so I went along, and was a success and made money. I met a man a day or two ago and he said, "I hear you are going out of the chicken business." I said, "No, I cannot do that; but I have sold out all but the Polands. I have made enough money, and I do not want to accumulate, for I have enough for myself and wife, and that is all I care for, and whatever would be left I would only get thanks for; and I never work for thanks, I only work for money. I don't care if I never make another cent. But I don't go showing for nothing; I want to get the prize. The trouble is a great lot of boys do not fix the birds before they take them to the show. You had better fix them at home. I could tell you lots about the way I fixed up chickens for the three World's Fairs. I won more money prizes than any other exhibitor at Chicago. I was the biggest breeder there, and I won the most prizes at the Pan-American. I did the same at St. Louis. I won $1,360 on chickens, and that was something for a Canadian. I went as far as Kansas City to show, and I won as high as $800 or $900, besides winning three pianos.

Mr. Graham: You pretty near fetched the show.

Mr. McNeil: No, the Show burst. (Laughter.) It did not burst in my hands, because I came away before it burst. I try to show at the first, because you get your money then. There was a piano for the largest exhibit, and then there was another for the second largest exhibit. When I got there, being a Canadian and not being much to look at, they had a deal of sympathy

for me. I found out who was exhibiting and the amount of their exhibit; then I divided mine, and made it for first and second. (Laughter.) I was a stranger in a strange land, and I said, "Now, I am here on my own hook, and I have to win." When I went out west I was younger, and I expected when I got out there that I would see every man and woman with hair on them like Buffalo Bill. I was well treated, and I can say this much, that if we had the kind of people here in Ontario that we have in the west we would have more go-ahead in us. They would come into the show every morning and they would say, "Here is Mr. McNeil, who has come thousands and thousands of miles," and if you had a hundred birds they would make it two hundred birds. Now, our people do not do that; they have not enough "go-ahead" in them. I do not want to look Mr. Donovan in the face and say that, because he is going ahead; he is improving fast. I do not want to go over all these things, because I feel ashamed to tell you the same things over again. I have been very successful in breeding. It is a mystery, but I will tell you the way I do. First, we have the eggs produced right, and then they are sure to hatch. A hen has an awful job to hatch a poor egg. I was over to a man's place the other day, and he had thirty nice chickens. He said to me, "I do not see why these eggs do not hatch at all." I said, "You ought to know; there is too much hen. I would not give five cents for about twelve of these hens for breeders." He said, "Is that so?" I said, "Yes." Let me give you some idea of how to breed birds. We always breed from about two matings, and I want to tell you you cannot breed right if you do not breed from two matings. It is not quantity, it is quality, you want to breed for. If it is a cockerel bird I am to breed I take two hens. I believe in a 2-year-old hen to breed from, because then you get the best eggs. I only breed from that male and two females, and I get a bigger per cent. of pullets from that. I say we must overbalance the way we want the birds. When we breed for cockerels we breed from cockerels, and we get them.

You are going to have an awful time hatching chickens if the eggs are not right. Get the eggs right first. There is much in the way they are fed. Do not, whatever you do, breed from a hen unless you hear the hen going around singing. That hen always produces a good egg. You always have to get the eggs right first, and when you are setting thirteen eggs only put in nine. Mr. Graham was telling about putting those eggs under a hen, and of her turning some of them out, and they will get cold and you will have no chickens. That is the fault of the man in looking after the eggs. As to setting the hen on the floor, I have had as good luck with a hen setting on a high place as down in the cellar. If the egg is right there is no trouble whatever in hatching it. I have had experiments with three incubators, and it was no better to hatch with them. I followed instructions and used judgment, but when a man has no judgment he has a job to make the incubator hatch. Any machine, in my opinion, will hatch the eggs. They are getting them down pretty well, and I think it is the fault of the operator if they do not do good work. I have had the Prairie State for over twelve or thirteen years, and the Chatham and the Cyphers now, and every one hatches with me. I follow instructions, and use a little judgment. Whatever you do, I want to tell you to get the eggs right, and then you have no bother. You take three hens and you set them, and they would all be grand setters. Some of them set standing for a couple of days, and it would take about twenty-two or twenty-three days, for the reason that the hens do not set in the beginning. We are very foolish sometimes in getting the eggs under the hen too quickly. We never should put the eggs under the hen. If the eggs are good the hen will hatch them from nineteen to twenty days; but when

you have chickens coming out about the twenty-second day, you are going to have weakly chickens. That is the cause of it, because they are not hatched right. In regard to mating them, I believe there is no man in this country, till he has bred a flock about three or four years, can tell what he is producing. You can go and buy one to win, and you can take that bird, but you cannot tell what that bird is going to produce the next year. The only way to make the thing a success is to buy the best and then establish your own strain.

My friend here wanted me to say something about Cochins. I suppose you would be afraid to take the Buff Cochin with a white wing. When you get the white in the wings you get a more even color. I would not be afraid to breed that with a nice pullet, but it would be no use to breed for cockerels from a male bird that had white in its wings. I would rather have a black feather.

Q.—What about the breeding of cockerels or pullets? Does it make any difference?

A.—I have never bred them, but you can breed them from the type; but for the color, that I have never thought of. In white birds of any kind of course we take our white birds, and we generally say all we have to get is shape; but I would not want to breed from a creamy bird under any consideration. You can color-feed any bird; you can color your white ones by color-feeding, and you can keep them white. I do not think any man should keep White Wyandottes and feed the yellow corn. There is this much about feeding birds: a great many people run away with the idea that if the bird runs out in the sun it will tan. It is true it will tan when the feather is a matured feather; but you have to let them run in the sun to ripen the feather. If you shut a white bird up, its feathers will get creamy. You can let it out in the sun to get white, but you must not let it stay out there long enough to tan. He would not get creamy in front of the windows.

The CHAIRMAN: Prof. Graham has called for some experience addresses, and I might say we have a young lady with us who has had extensive experience, and it my break the monotony if we would ask her to say a few words to us. I have now much pleasure in calling on Miss Yeates, who has had some experience in England.

ENGLISH POULTRY CLUBS.

By MISS YEATES, RAYSTON, ENGLAND.

It is a little unfair for you to spring upon me at this time. I am afraid I have not my facts properly looked up. You must know we are very keen on the winter egg production in the Old Country. We have a very large demand for high class products of all kinds, as no doubt you have noticed the Old Country farmers on one of your great markets. We can obtain very high prices indeed for the best of everything. The table poultry question, for instance, is only in its infancy in Canada, yet we require a much higher breed in London, Liverpool, Scotland, and Ireland. It is a very much better finished thing altogether than I see put out here at all. I will leave the table poultry question and go into the matter of egg production, which has been interesting us a great deal. There is a great scarcity of winter eggs, and the Utility Poultry Club has taken the matter up.

Mr. GRAHAM: Might I ask about the organization of that club, how it is conducted?

Miss YEATES: I cannot remember the age of the club. Mr. Holmstead was the originator. He is one of the big Scottish land-owners, and was very much struck with the wide difference between the ordinary exhibition poultry and what he considered necessary as a utility type. We have gone to a great extreme in breeding exhibition types almost to the exclusion of their utility characteristics.

The Brahma, that most hardy of birds, has to a great extent lost its hardihood and its laying capacities. The Leghorns have been bred so much for the comb development that they have lost their great activity and hardihood. Mr. Holmstead looked on it this way. The extreme development of type for exhibition purposes led him to the conclusion that something ought to be done to encourage the breeding of birds along utility lines—that is to say, not losing sight of type, but that in breeding for type the utility characteristics should be taken into consideration. At one of the dairy shows held in London every autumn by the British Dairy Association having the great poultry show in connection with it, Mr. Holmstead put forward his idea, and it was taken up very well, and certain officers were appointed. The work has grown very fast indeed. I believe last year there were 1,500 members. The annual meeting is held at the same time as the British Dairy Exhibition, in the Agricultural Hall, in London. One of the main objects of the club is to encourage the holding of winter laying competitions, so as to encourage the breeding for egg development. Another object is the Information Bureau. The Government does so much here that is in the hands of private people at home. It seems strange that those matters should be left to the people; but the clubs and societies have done a very useful work in that way up to the present time. Then there is the National Poultry Organization, of which Mr. Brown is the secretary, and he is also a member of the Utility Poultry Club. There are several other objects, but the main aim has been the giving of special prizes and special encouragement to table poultry. I think the first competition was held in 1897, and the Minorcas won, with 161 eggs. Each breeder is entitled to send in four pullets of that year, and they send their entry to the secretary. There is a secretary for the management of the competitions, as the club secretary has too much to do. Mr. Cyril Dunkley was the secretary, and the entries were sent to him, and no man is supposed to send in more than one entry. The manager is appointed by the committee of the club. They take the greatest pains to secure an efficient manager, and they go down and inspect the grounds personally and see that the houses are sanitary. One essential is the trap-nest system. Two years ago I was asked to tender for the management, which surprised me greatly, and I was appointed manager. I had started for myself by that time in Rayston, Hartfordshire, about an hour's journey from London. I set up a little plant there. I am very pleased now that I heard the discussion of open air treatment, and I find that I was pretty well ahead of my times. I adopted from the beginning for the front of my house an arrangement of glass and canvas, which you have been considering as beneficial. I had twelve individual houses, all facing in the same direction, yarded in a certain way, and the fronts of my houses were entirely of glass and canvas, according to the Canadian opinion. I tendered for thirty pens of four birds. The committee came down to inspect them, and they considered that I could accommodate six more pens; and at the end of the month I had thirty-six pens, which was the largest competition that had ever been managed. The birds came from all over the country.

Mr. GRAHAM: About what time of the year did you start?

A.—September. The competition began in October, and continued over October, November, December, and January, as a rule. The birds came in

in the middle of September. There was no restrictions with regard to feeding; I was to use my own judgment. I must say I considered it a very high compliment that they appointed me manager, as most on the committee are men, and there are 1,500 members. You understand that the male sex preponderate; therefore when I came before the meeting and told my views, they said I could have a free hand with the feeding, using my own judgment entirely. I think the only restriction was that they were to have grit. The report that I gave to the committee involved a considerable amount of labor, as you understand each bird was weighed and numbered, and the weight given when she came in. The trap-nest system was used, every egg was weighed, and the awarding of the prize is by weight, by point. A bird only scores two points for an egg weighing over 1½ ounces, and the prizes go by points, not by the number of eggs, because the club wish to consider the production of the larger egg. The demand on the English market by the high-class trade is for a very large egg.

The White Wyandottes had won this competition for two years, and White Wyandottes were third and fourth, White Leghorns fifth, White Leghorn, not of the ordinary exhibition type, what we call in England the American type of bird—small comb, small, bright, active, smart-looking birds with very small comb development. Those four birds laid 251 eggs in sixteen weeks, gaining 500 points.

Mr. GRAHAM: What were the second, third, and fourth breeds?

A.—The second pen was the surprise of the competition, the White La Bresse, the French breed that had hitherto been known as the table bird. White Wyandottes were third and fourth, White Leghorns fifth, White Wyandottes sixth, Buff Orpingtons seventh, which was a bitter disappointment to me as I was a Buff Orpington breeder. The first year the four birds laid 245 eggs in sixteen weeks.

Q.—Did you find in those competitions that it was a question of strain more than breed?

A.—We did. The whole object of the club is to demonstrate that to the farmers; it is entirely a matter of strain, not breed. That was the first year of my management, and at its close the committee approached me and asked me if I would manage it again. At the same time the Women's Agriculture College, in which I had been, was in great difficulties. I served with them for two years, and then left to start for myself. At all events, they asked me to give up my private work and come back and see if I could help them in their crisis. There is something about college work that appeals to all who have had the privilege to take part in it. It touches you very deeply to think that the college might want your help and not be able to get it; and so I decided to go back, at a very great sacrifice, financially. The club, when they heard of it, said they would not stand in my light, and, as they wished me to manage the competition again, they would still give me the management. My whole poultry plant was carried across the country and located in the park of Studley Castle, Warwickshire, a far better situation than I had on my own place. There was a beautiful screening of woods to the north, east, and west. The woods of Warwickshire are famous for their beauty, and there was an opening to the south, and in consequence of that the competition was a greater success than it was the year before, although the year before I had obtained average record. The record in the grounds of the College was a very interesting one indeed; but again the White Leghorns won and the Worcestershire strain. The pens were only known to me by a number. I didn't know anything about the ownership of the birds till it was all over. I was distractedly curious to know in many cases who were

the owners. The White Leghorns were first, and the Buff Orpingtons were second and third, White Leghorns fourth, Buff Orpingtons fifth and sixth, and the White Wyandottes were seventh. This was interesting, coming in for the seventh place, as they were the strain of birds that had won twice in the previous years.

Q.—Do you know whether the birds you had under control were naturally hatched or artficially?

A.—These Wyandottes were artificially hatched.

Q.—Had they been the previous year, too?

A.—Yes. Was not that an indication of theory of the strain telling, that Wyandottes beat all the others, and Wyandottes again? There were other birds entered, but they beat all the other Wyandottes entered. The White La Bresse were further down, and the man was terribly disappointed; but they were much younger birds, and they were fed differently.

With regard to the meat feeding the second year, I gave considerably more nitrogenous diet, and I used a little maize—you call it corn here. With regard to the average of the whole flock, the whole flock gave 140 2-3 as the egg average per pen, against 135 1-3 of the previous year. That was my first management. The second time I got it up higher; it was 150. I wish to say that in my opinion it was due to the more sheltered conditions. I do not attribute the difference to the nitrogenous feeding.

Q.—Were those pens on the grass runs?

A.—They were.

Q.—Is there any preference given to the egg now?

A.—Yes; the brown egg—the large, brown egg.

Q.—Do you sell eggs by weight?

A.—No.

Q.—They have to go a certain number to the pound?

A.—In the wholesale business it has. If you are catering for clubs and small hotels you do not go under the same rules that you do if you are catering for ordinary wholesale business. I do a large new laid egg business of solely wholesale character.

Q.—From the strictly financial standpoint, although the Leghorn came first, they might not give the biggest amount of money?

A.—That is so. Certainly you get a very big egg from the Leghorn, and their general behavior was very good. For instance, they were the first; they were the first to take advantage of the use of the subsidiary runs; in the winter they were hardy. Each house had a yard to itself, twelve birds housed together, and each had a long, narrow yard ninety-one feet long by thirty-five feet wide, and opening from the bottom of that was a large subsidiary run that was the whole width of three of the thirty-five feet wide pens, and ran down another ninety-seven feet, which was ninety-seven by three times thirty-five subsidiary runs.

They had the use of the small yard, and every third day they get the use of the big yard, and every fourth night they were given free range at the back. The front of the house was closed, and canvas, with movable screens that drew up. There were trap doors admitted into those runs, and the trap door at the bottom of the run admitted into the large run, and I had a considerable amount of hay grown in the run. It was an important asset. I got a crop of hay one year, and another year I had sheep in there.

Q.—Were they run with the chickens?

A.—No.

Q.—Would you put three breeds into a run of four birds each; that would make up twelve birds for each?

A.—Yes; the system of operating was the one you teach here, with the door below, and there were four trap-nests to each twelve birds.

Q.—Did you have trouble with the hens laying outside the trap-nests?

A.—No. It is an astonishing thing how you get to recognize the eggs. It did not occur much, and we made six visits to those houses every day. We would often catch the birds in the act of laying; but we did not leave them long without a visit. You cannot pretend to give that much labor on an ordinary farm. I am not advocating that for a moment, but at the same time it is a very good thing to be able to buy your eggs from the place where trap-nests are used. I hold a theory of my own with regard to this poultry business. I went in for the egg business, and produced new laid eggs, and I sold 7,000 eggs a week. I did not pretend to do the hatching and rearing in my own place. I kept my own stock birds, but the hatching and rearing plant was on another farm altogether, and that was run as a separate business. I have not been asked to give my opinion on these points, but nearly all mistakes made by people beginning the poultry business is that they undertake too much. One branch of the poultry business is enough to go into if you are going to go into it heart and soul; but I think it is one of the most difficult businesses to attend to from the utility standpoint; you make better profits with exhibition stock.

Q.—Did you keep an exact record of the food consumed in each of those pens, of each variety?

A.—I cannot tell you each variety accurately. You see, I got more than one pen of each variety.

Q.—Did you find the pens that are laying the best consumed the most feed?

A.—I cannot say that I did find that, because the White Leghorns were remarkably small eaters, and they won; and it does not take as much to keep a White Leghorn as it does a Lincolnshire Buff.

Q.—What is the difference between a Lincolnshire Buff and a Buff Orpington?

A.—We like to think there is a great deal of difference.

Q.—Is there any real difference, or is it purely a fad?

A.—I am not prepared to say; if you examine the feathering it is different.

Mr. Graham: Is the shape something similar?

A.—Yes.

Q.—The general characteristics are very similar, but the color is different?

A.—I have heard a good many authorities say the same.

Q.—Did you have any Faverolles?

A.—Yes.

Q.—How are they?

A.—Very poor layers, but it was with them I won all my prizes.

Q.—Have you the Speckled Sussex?

A.—Unfortunately, a bird of that class died, and they did not have another to send in its place.

Q.—How much does it cost to produce a dozen eggs on your farm?

A.—At what time of the year?

A Member: All the year around; taking the average?

A.—I cannot tell. It takes two shillings and a penny—about half a dollar—to feed one of those birds in a competition for eighteen weeks.

Q.—Practically a dollar and a half a year, provided they eat as much as the others?

A.—You would not give as much in the summer time. They did not feed by weight.

Q.—Did you find any difference in the price of wheat and maize there and here?

A.—Yes, a great difference. Wheat is 75c. a bushel now, and it is 4s. 6d. there—that would be $1.10.

Q.—What is the price of maize or corn?

A.—I cannot remember.

Mr. DONOVAN: It is much higher than here.

A.—You cannot always get the right kind of maize.

Mr. GRAHAM: Your meat scrap?

A.—There is a great difference here.

Mr. GRAHAM: Did you use scrap gristle?

A.—That is very expensive indeed. We found a maker of Pond's Extract of Meat, and I asked him what they did with the wastage, and they said they were prepared to put it on the market for poultry food, and they sold that at 15 shillings a hundredweight—that is $3.75—but it is not an overly high class of product.

Q.—Did you use much of Spratt's chick food?

A.—They are all so expensive that I made my own.

Mr. DONOVAN: How are the number of points proportioned?

A.—Five hundred points are the maximum, and you work down instead of working up.

Mr. GRAHAM: Five hundred is the highest amount that can be obtained?

MISS YEATES: No; that is not twice 251. The next pen got 468 points.

Mr. DONOVAN: That is two points to an egg?

A.—Yes, two points to an egg, weighing 1¾ ounces.

Mr. BALDWIN: Suppose the egg weighs two ounces, would it get an additional prize?

A.—No; they get one point for an egg, unless it is a soft shell egg.,

A MEMBER: Their eggs must be larger than they are here?

A.—Yes, it is a large egg, and, in my opinion, in looking around the eggs I have seen in Canada they run smaller here. Many thanks for your kind hearing.

The CHAIRMAN: I think it is most interesting to hear Miss Yeates speak of her experience. I hope we will hear more from her again.

The CHAIRMAN: We all know there is no man on the continent can tell us more and show us better how to fit birds for an exhibition than our good friend, William McNeil, and he will tell us the way in which to accomplish it. I was going to say something about ethics, as it were, just on the question of what is legitimate and what is illegitimate in preparing birds for exhibition. There is such a thing as perfectly legitimate breeding. There are some things in fitting birds for an exhibition that are not legitimate; that is painting the bird's legs. I use that as an illustration of illegitimate practice. We cannot have any discussion on the ethics of it, but I think it is wise to suggest a line of thought in that way; and now I have much pleasure in calling on Mr. McNeil, of London.

FANCIERS' METHODS OF BREEDING, FITTING, AND SCORING EXHIBITION STOCK.

By William McNeil, London, Ont.

I am glad to see so many here this afternoon. This is to me a hard subject to talk upon, as I am one of those practical men, I can do more than I can say. When I handle a bird I handle it carefully. I have been very successful in breeding; it is an easy thing to do. When you do a thing, do it well, and make a practice of doing it well. I want to show you something about holding the chickens. Most people catch a bird up and have him flapping about. Now, this one lies quiet; I can hold a chicken as easily as a mother can hold a baby. (Mr. McNeil then gave a demonstration, fixing a comb on a White Wyandotte cock.)

Mr. Donovan: Is that the way you manufacture White Wyandottes?

Mr. McNeil: When the comb is soft you can put it in any shape you want. You should use hot water. Let me tell whoever is breeding that kind of variety that before I would breed a bird I would make it as perfect as it was possible to make it. Like begets like, and then we are going to have them that way. I would fix the comb before I breed, not after. You may say that is a fixed comb; sure it is, no doubt of it. That is the only way to make them right if they are not right; but make them right before using for breeding purposes.

Mr. Graham: Did you keep black hens in a black hen house then?

A.—It is not wise to let the males and females see the other sex in another color. It would be better not to let the black or white see each other during the breeding season.

In breeding birds the first point is to get the bird tame. If you have them bred for the exhibition you should have them so that you can pick them up and put them any place you like. There are no people that spend as much time on breeding the birds as the game bird man. They have a stick, and every day they will go and train that bird to stand just the way they want it to stand, and when the judge comes, the birds will not fly around. The game man deserves great credit, for he trains his birds creditably. I take out a bird and handle it any place; it is no bother to take him out, and he is not frightened by the judge.

The first thing to do when we are breeding is to make our stock familiar with us. The chicken should not be afraid of its owner; if the bird is afraid of him, he is a poor owner. You should train them right, and then they will score two or three points over one that is not trained.

About feeding. Any man who knows the value of food can always feed his birds and keep them in color. I contend that every bird is color fed, and if it was not the case, we would not be so particular. We feed to produce a good color, and to get a good class, and by the way a bird is fed you get the class.

Look at the canary men. They have an article in the by-laws saying that there is a fine for color feeding. You take a bird that is poorly fed, and he does not have the color that a bird should have if he was well looked after. You can feed corn to white birds, and you will get them creamy; they will not have such a tendency to go creamy with wheat or oats. We make a mistake in feeding too much corn; corn is too fattening, and the birds will not do so well or lay so well.

Here is a nice bird. But I would take her and pull a dozen feathers out of that wing, and make that wing so that you could see every spangle in

it: then you turn around to the other side, and you see this one is dark. Now, I would run over this bird, and when I would find a feather like that, I would take it out, because that is not a good feather.

Now, I will show you a good feather. This is what we call a sick feather. If I was going to show, I would remove those feathers; and the judge would never take notice, and I would not have so much express charges to pay. That is not faking.

I want to show you these combs. There is one that has never been fixed. I remember about six or seven years ago being at the New York Poultry Show. I was passing up the Langshan alley, and we were examining the birds, and just as I passed by my friend said to me: "What do you think of that bird?" It had little white tips here; it was about fifteen months old, and had never got rid of those chicken feathers. I said: "It is a good bird in a poor man's hands." The young man who owned this bird was a millionaire, and he followed me up and said: "Look here, you said that was a good bird in a poor man's hands; I am not a poor man." "Well," I said, "you are poor in the chicken business."

What we want to have in the Golden Poland is to have the lace completely around the feather. A Golden Poland is hard to breed. A Silver Poland is white and black, and the two colors will run in and mix. There is a sister to this bird here that won first at St. Louis.

Q.—What kind of crest do you want?

A.—This is about right.

Q.—What can be done to a crest that spreads too much?

A.—On a wet day I take a string and tie up the crest; the bigger we get the crest the better. I should have been an old bachelor, for I do everything myself.

Q.—Do the white crested black pullets come with a solid black crest?

A.—No; there are a few feathers in that bird that we could take out.

Q.—What do you feed to get that sheen?

A.—I take equal parts of oats, cracked corn, and wheat, and I mix them. I take a dipper full of it, and they are fed that in the morning and at night; and then perhaps to-day they would get some green bone, and to-morrow some cabbage; then they get a pail of soft food only every other day.

Q.—What is the soft food?

A.—Take a little of Spratt's food and shredded wheat shorts and bran and corn meal.

Q.—Do you use any linseed?

A.—Very seldom, unless just in moulting season, for about six weeks, when they begin to shed their feathers, and on until they begin to get them. In each pail of soft food they have two big tablespoonsful of charcoal, and then, say in about a month or six weeks, I put in two tablespoons of common salts in a pail of soft food.

Q.—Did you use any treacle?

A.—Not now. I used to when I was keeping store, but I do not now, for I have to buy it.

Q.—Did you have a sugar barrel?

A.—I think if you want to grow chickens there is nothing like a little syrup or molasses or sugar and linseed occasionally. I can get chickens a good six pounds at about four months old, and have them laying. I am one of the old timers. I used to know more about chickens than I do to-day. I am lazy now. You do not want to be lazy; go all the time; never think of counting your steps. I used to be very punctual in feeding my chickens at 6 o'clock in the morning and 9, 12, and 3, and then give them something

before I went to bed again. Anything that I have got I have worked for it. I look upon the chicken man as being the finest man in the world. I want to show you a scoring card I got twenty-one years ago. I got it in 1886, here in Guelph. I have been here, back and forward, this last thirty-seven years. This was for Silver Seabright; she scored 98¾ points.

Mr. BLACK: You told us about feeding at 6, 9, 12, and 3 o'clock, and then all they eat at night; is that for a little chick? How long do you keep that up?

A.—All the time.

Mr. DONOVAN: I believe that is a good, lazy man's feed. A chicken man does not want to count his steps, and a man who feeds in the hoppers, counts his steps; and he does not feed them, but just throws it to them. It is like a man going to see his girl. Why does he go three or four times a week to see her? It is because he loves her. It is the same feeling with chickens.

Mr. MCNEIL: Mr. Buck is one of the best of our men. In his system of feeding with his chickens he has a lot of boards nailed together, and he puts in a lot of wheat in a trough for the little chickens, where the hens cannot get at it, and perhaps twice a day he feeds them on soft food. He goes along with a pail and throws in some shorts, and they have all the wheat they can eat, and all the milk they can take, and all the fresh water. That is a very good way, but I have had no experience with hopper feeding. I would want to go and feed them myself every day. There is too much time wasted on the chickens, after all. I never give them any water till they are six or seven months old. They will be in from April till perhaps August, and they never get any water; and if we did not use so much water and soft feed we would not have so much roup. I was at William Morris's, and he had a nice lot of chickens. He was giving them Morgan's Roup Cure, and I adopted it. I took one measure full, and I put it into two gallons of water, and the chickens had no roup. I think it kills the germ.

Mr. DONOVAN: What time of day do you water in the winter time?

A.—I water about 10 o'clock, and the way I do I put a measure full into two gallons of that, and I go around and give them about as much as they can drink. I just give it to them once a day now.

Mr. BALDWIN: With cocks, the spurs very often grow so large that they are really clumsy and trouble the birds. I saw you trim an extra long spur on a bird, and I think that a demonstration would be of interest to the audience. (Mr. McNeil then gave a demonstration of fixing the spurs on a cock bird.)

The CHAIRMAN: I am very much obliged to Mr. McNeil, and I think the meeting has benefited from the exhibition he has shown us. I am going to ask Mr. Oke to speak to us, having in mind the judging of Orpingtons.

Mr. OKE: I am sure we are all pleased with the work Mr. Graham is doing. I think he is the right man in the right place, and I must congratulate him. I do not think there is any other person in Canada that could hold on to this job as long as he has, and I am sure, with such a class as he has here to-day, he must feel that his efforts are being appreciated. I am no talker, but as far as judging poultry is concerned, I will try and do the best I can for you. I am not an advocate of the score card, but we will use it to-day.

In scoring, about 50 per cent. is allowed for shape and the other 50 for color. We take this bird, and you take his symmetry. He has very good width, but he fails in not being deep enough; he is not breasted enough. Now, you look at the comb, and, using your score cards, I will allow for that comb. You see all these twists in the front and the irregular spikes. Now, I should say that comb should be cut one point and a half.

Mr. DONOVAN: How much do you cut on symmetry?

A.—About one.

Q.—For weakness in points of breast?

A.—The general make-up of the bird.

Q.—How do you understand symmetry?

A.—To tell you the truth, when you cut a bird for shape in the different sections, when you cut for symmetry, you cut him twice in the same section. In the wattles, I would cut this three-quarters. There are creases in them. I would cut that ear lobe one-half.

Q.—Is that on shape?

A.—Yes, on shape—one-half on shape of the head, and cut him one-half on shape of the neck. There are some feathers not matured. He makes too sharp an angle. Cut him half on shape of back, on account of being a little too narrow. There are several feathers broken in the tail, and they do not meet as nicely as they should; I would cut him one there. The Orpington type is more the type you want. The shape of the wing is all right. The shape of feet, one-half; cut him three-quarters in color of neck. You want a rich, shiny black, and he is a dead black here. The wings are very fair, but they are a little purple here, so I would cut him three-quarters on the wing color, and back one-half, and tail one.

Q.—Why?

A.—Color is not right. He has not a good, rich, glossy tail. Breast, one-half.

Q.—Why?

A.—This is on color. I am cutting on color now. It is dull; he is bright enough in some sections.

Q.—The green color is good, isn't it?

A.—Very good.

Q.—What about the brown in his flights?

A.—There are some chick feathers in there yet.

Q.—Do you count weight and size?

A.—We are not up to that yet. A bird like that should score in the neighborhood of about 89¼.

Mr. GRAHAM: Criticize the Buff Orpington. I contend that the Black is away ahead of the Buff Orpington, so far as shape is concerned. I think it is more in length of feathers than anything else.

Q.—Should we encourage the length of feathers in order to do it like a Cochin type?

A.—Not the Cochin type.

Q.—You can see there are two different types of birds; which one is a person to breed to?

A.—The first bird is far ahead of the second in the Orpington type. This second one is too pinched all over, in my opinion; carries his tail too high, and is pinched in pretty nearly every section; he has not width enough.

Q.—If he had a little longer feather it would improve it?

A.—He is pinched.

Q.—He is too tight-feathered?

A.—Yes; this bird, if he had a little more fulness of breast, I would consider pretty near the typical shape, but he fails in front for an Orpington.

Q.—What is the score by looking at it?

A.—I say about 89, or something about there.

Q.—He scored 86, and I think that is plenty for him?

A.—I thought he would score a couple of points more than that.

Q.—If that bird will not score 90 according to the score card, how many birds are going to score 90 according to the ordinary show? But he cannot score 90; he is four points short. You will find very few birds better than that one.

A.—When I was up in Winnipeg, judging, the secretary said to me: "I want you to stick right to the point, strictly, and not give us any out-of-the-way scoring." There was a third of those birds that never got a prize. I scored a Buff Orpington 86, and he said: "That bird scored 95 last year, right here at this show, as a pullet," and I considered that was every bit she was worth. She was a poor shape, and I contend that there is where the most harm is done with the scoring cards in little shows. When the competition is kind of slack and you go to work and score them up high, it is wrong. You should do the same thing at a small show as you would do at a large one.

Now, this bird is very nice in type, but fails in color of breast. Those sections do not blend together. He is too dense here in the wing, and has not that nice, level color throughout. There are two distinct colors there. There is one color there and another here, and almost another altogether on the tail.

Q.—If that breast was better, wouldn't that win?

A.—Yes, but there is too much difference between the breast and the neck. The colors do not blend together. You want nice, smooth colors that blend together.

Q.—Isn't the breast color pretty good?

A.—It is a shade too light, and a shade too dense over there. It is going to the two extremes.

Q.—What about the shape of the black hen? Is that the best type of the three?

A.—This is the best type of the three I have come to yet. She is a bit pinched across the back; a little too narrow here.

Q.—The Orpington hen should not have much cushion?

A.—It should not have any cushion. This one would fail in color pretty near all over. She is too dead in color.

Q.—In breeding for a good green-black, is it best to use the green-blacks?

A.—It would be best to use one like this—a dull black. If you breed to extreme greenish colors you get purple barring.

Q.—What about this one (a Buff Orpington)?

A.—That is a pretty level color. It is pretty near to a Golden Buff.

Q.—What is the worst defect on that hen?

A.—She has a bad tail, that is sure.

Q.—Would the feather on the leg be the worst defect?

A.—That is a disqualification. Outside of that, I consider her tail is the worst defect she has, and her head might be improved upon, too.

Q.—Is the head too narrow?

A.—Yes; too narrow across the skull. I do not consider her a good shape. She is a little smaller than the black hen, and she carries that tail too high, but she has the right length of back for the Orpington. I would call her a medium between a Rock and a Wyandotte in length.

Mr. Clark won first in Orpington cockerels at the Winter Fair, and I advised him to show it in New York. He sent the bird, and won first in a class of thirty. He was alone, so far as shape and color were concerned. You could not see where the neck left off or the back started. All the different

sections blend together, and it was a real, good type. I think he won with his first hen the third prize in New York.

Q.—How did he compare with the first prize black Orpington pullet, as far as shape was concerned?

A.—He hadn't the length of feathers that the Black Orpington had. The first black cockerel weighed eleven pounds. There were a lot of birds thrown out of the show, because there were so many foreign colors. I believe there were some birds imported from England, at a cost of $700 or $800. They mated them together, and the offspring were completely covered with purple bars from head to tail. There was not one that got a mention. They had good type, but they failed in color in nearly every section.

Q.—Did you find that in the Black Hamburgs?

A.—Some.

Q.—Do you get Orpingtons too short in the legs?

A.—I think a bird should be proportioned. The larger the bird would want a greater length of leg to be in proportion.

Q.—How about the color? Isn't that about right in the females?

A.—Yes, that is about right, but there were Black Orpingtons shown at New York, when you could not see underneath them, they were down so low on the shanks.

Q.—Did they get a prize?

A.—Yes.

Q.—Doesn't the hen throw her head a little too far back?

A.—Yes.

Mr. Newton Cosh, in giving a demonstration of judging a Plymouth Rock, said: This bird is a nice type of a Plymouth Rock. It won at a large number of shows, having exhibited for quite a number of years quite successfully. I find it takes a different bird to win over on the other side from what we have here, and it should not be the case. We try to breed the bird that will bring the most money from the fancy standpoint. Now, I will give you some idea of the difference in them.

Here is a cockerel I had at a show here, and he would not get a mention in the next twenty years; but when I left home I thought I knew the judge pretty well, and I thought I had a fairly good idea of a Barred Plymouth Rock; and I expected to win on this cockerel, but I did not get anything.

I found out afterwards that he was just the bird I should have taken to Boston. You notice the fine uniform barring. First of all, he is all of one color and shade practically. Then we will take his shape. His shape suits me splendidly. Now, I would like to know what you think of this bird as to shape.

A Member: It is a little flat on the breast.

Another Member: Isn't it light in weight?

A.—It is about the standard weight, and I would not cut him for that. Of course, he is not standing as nice as he might just now. A great many people are under the impression that a Barred Rock should have a long back, very much longer than a Wyandotte is. There is not very much difference when you look at this cut between a Barred Rock and an Orpington. It is pretty hard to distinguish what is the difference between a Wyandotte and a Plymouth Rock.

Q.—Isn't it more in the length of feathers than the length of back?

A.—Yes, a little. I would rather have a Plymouth Rock approaching the Wyandotte type than I would the other way. I would not give you five cents for the long cut-away birds, in the back. I do not think they should be encouraged, because they are no good. This bird, I consider, is a good

one in shape. I want to speak more particularly about the kind of bird we want. We want to show that ringy effect in the barring, and the same character all the way through. Generally, if you get the barring fine on the back, then it will break just here, and get coarse. There are two shades of coloring. We want to get a uniform coloring. You will notice that this bird has very fine, narrow barring, quite ringy.

Q.—How is he in color?

A.—It is fairly good. The standard calls for feathers equally spaced, black and white. So you see that the barring is good in that respect. It is rather hard to get the barring to extend out to the end.

Q.—How is it in the wing?

A.—The wing is pretty good in point of barring, but it is a little brown. The shape of the tail is good.

Q.—Wouldn't that tail improve?

A.—No, it is past its best; it will get worse every day now. Here is a bird, and its shape is good; it is particularly good in the breast.

Q.—Is it too long in the back?

A.—No, not for that size of a bird. Its tail is a little too long, but altogether it is a very good shaped bird.

Q.—What is the difference between the cut on those two breasts?

A.—According to the standard, we only allow four points; the cut, according to that, would be very little. This is a cockerel and the other is a cock bird.

Q.—There are not two standards—one from cock and one from cockerel?

A.—Well, I consider a half a point.

Q.—You cut them 12 per cent.?

A.—Yes; I consider the other 12 per cent. better.

Q.—You would not cut the other one at all?

A.—No, not in shape. He is nice in front, but the tail is rather sharp and too long.

Q.—What about the cockerel's head?

A.—He has a good average head. It is not perfect, but it is better than the average one. One thing I do not like about a Barred Plymouth Rock is a coarse texture. This one is not as finely barred as the other. The color of the hackle is pretty good. This one here is black, as if he had been pulled down a chimney.

Q.—Would you use that bird for breeding cockerels or pullets?

A.—For breeding cockerels: yes, certainly.

Q.—Would the people like to see a pullet breeder?

A.—Yes.

Q.—This is a splendid cockerel. I do not care what he looks like, as long as he breeds all right.

Q.—You would expect to get good cockerels?

A.—Yes, quite possible.

Q.—You breed him to darker females?

A.—Yes, you would have to do that.

Q.—What is the fault of that tail, in having too long feathers?

A.—You would not get one in a million without that.

Q.—What about the head?

A.—I would not find much fault with it.

Q.—It is a better head than the cockerels?

A.—Yes, a better one.

Q.—It has not a very good comb?

A.—Pretty good; there art no thumb marks or crinkles.

Mr. McNeil: If that was taken out it would make the comb better. If you cut that off, you would have a comb that is all right.

A.—It would be rather short.

Mr. McNeil: I would not cut it off; I would round it.

Mr. Cosh: He has a splendid beak. It is only in recent years that they used these females to breed with. There is that much difference between the color. You take perhaps the sister of this cock bird and they are so dirty and black you would not give one dollar for them. They do not approach the quality for exhibition purposes. The sister of this bird here would almost surely approach the ideal color for exhibiting purposes. Now, there is the extreme in the two matings. Here is a female that was winning at shows. She is a bright blue color, but the color won't last; it fades. No matter how clean she is, the judges at New York would not take her out of the coop, because she has not enough fancy-work about her. The standard calls for parallel birds, equally spaced, black and white, and they should be clean-cut.

Q.—You can pull some of those feathers out.

A.—No, you cannot. The bird is too coarse. She shows too much white. We take this old hen, and she would never be looked at in our Ontario show.

Q.—How about next year?

A.—She would stand a better chance next year.

Q.—Is that the coloring you will show next year, when you show

A.—I think it will be a little better. There is equal barring there. I do not maintain that because she is not better in color that she should not get valued for her good points. She is a good shape, and has good wings. We would call that a pretty good hen, probably, at the big shows. I do not think there are twenty hens in New York that will class better than this one.

Q.—Was our own show a better show in Rocks than it was in New York?

A.—No: we were away behind Boston. I think we are better up in the line of females than we were in the line of males, but the class of cockerels at Boston was the finest we had ever seen.

Mr. John S. Martin then gave a demonstration of judging White Wyandottes: This hen here has a very good front. She is deep, but I would like her better if she was a little rounder. I do not like to see that wedge. It is not right to have the wedge-shaped keel. You want them round in front, and then you want it as low as you can get it.

Q.—Can't you improve on that wedge now by drawing those feathers out? Then it would be round.

A.—She can be improved some. Of course, if you take it off, she would be higher in the breast. In point of head, I like this hen's head. You cannot have a skull too broad. I would like the head a little better up here. I thought that in the United States they had all one type in view, but I find that they have not. I find that there was a great deal of unrest. I was a little surprised, and I do not think there is any reason for it. I think we have the standard here, but they have actually been carrying hens that were nothing but Cochin. They went to an extreme; now they are going the other way. If you had one of these hens with a great big Cochin cushion and took a photo of her, it would not look any more like that standard than the Leghorn.

At the show in Boston there was a great deal of dissatisfaction on the part of the breeders. I am satisfied that they will have a change of judges. I would like to see all the parts blend. You want a perfect blending. There is too much cushion, but that cushion with the proper tail would be all right. By that I mean brought right over the cushion, and it spreads nicely. Look-

ing at the head of this hen, I do not like it quite as well as I like the breast, and I like to see a nicely rounded comb, following the shape of the head. If you will measure this comb you will find it is almost horizontal.

Mr. GRAHAM: It is not a rocker-comb. No, this is a much better back, but the same objection could be taken to it. If the cushion should be carried out towards the tail farther, it would be better, and that would make a great improvement. You do not get very many that will come right up to the end. Altogether that is a pretty fair hen. Her head is the worst part, and there is a hollow in the comb. That is a longer type of Wyandotte. Not the chunky form that the other one is.

This hen's tail comes up in a bunch; she has a fair breast, but the whole appearance shows that she is a longer shaped hen. The comb is very nice; she is longer in the back, and has a long head. Starting from the back, she has the same appearance.

Q.—Do you think the tail is the greatest defect of the hen?

A.—She is a little narrow, and I would like her deeper. She is rather too long for her width.

Q.—How do you like the length of the legs of the second hen?

A.—The toes are straight. There is another point I hear a great deal about in Boston, and that is as to whether they should show thigh. They should have a certain amount of thigh showing, and some do not have as much fluff as that on the thigh. This hen is a long type.

Q.—How is she for width.

A.—Rather narrow, but she is not as faulty as the last one we had in there. She has a nice, fairly full cushion. The tail is pinched a little, but it is a better tail than the last one had.

This hen has rather a nice breast, but the head has rather a big comb. It is rocker shaped and wide. It follows the head nicely, but it is a little uneven here in front. The head is fairly good, with the exception of the wattle. They used to show male birds two years ago with tremendous wattles, but I think they are doing away with that now. I do not like the long wattles.

You cannot freeze a White Wyandotte's comb. It is a strange thing in hens. I had a very good one with a good tail, but she lost several feathers. I never pulled any out; they must have moulted out.

Q.—The tail is well spread?

A.—Well spread; the day has gone by for pinched-tailed Wyandottes. They have been showing hens with a great big hump in front of the tail that covers her tail up. That is the Cochin I was talking about.

Q.—Is there a flatness between the shoulder and the keel on the side?

A.—That long wattle spoils her look, of course. She is disqualified for her comb.

Q.—Which is the best shaped head of the lot?

A.—I like to see a full head on a Wyandotte.

Q.—Her head seems long?

A.—Yes.

Q.—What about the wattles?

A.—I like a medium-shaped wattle. I have not changed my ideas a particle after seeing the Boston birds. I think they are just as undecided about certain types as we are. I like it nicely evened up, not too much cushion, and I do not like to see too much tail showing. I like them short and deep.

Q.—What about the tail being out?

A.—In feathers like that being out it might make a difference.

Q.—Would you allow a bird with a tail out to compete with a bird with a tail in? What does the standard say to that?

A.—If the feathers were going to make a difference, I would take other things into consideration. I practice the double mating to a certain extent. You breed a female with a rather heavier cushion than an exhibition bird, and you get nicer cockerels. I consider the first bird is the best type. You want to cut those legs a point and a half, for color.

Mr. Graham: Judges differ in opinion, and it is better that they should, or they would want to marry the same woman.

Mr. Graham: I think you have the birds in the right place.

Mr. Oke: If I was going to buy to-morrow, I should buy that little hen.

Mr. Graham: What do you think about it, Mr. Donovan?

Mr. Donovan: I would not like to say without handling them. I think I would place them the same. One hen has a very masculine head.

Mr. Martin: The long wattles give it that masculine appearance.

Mr. Graham: With your permission I would like to move a vote of thanks to all the speakers, and, for that matter, we include those of the entire Institute. We are very much obliged to Mr. Martin, Mr. Oke, Mr. Cosh, and Mr. McNeil for the sacrifice of their time, coming down here to demonstrate to us the fancy points of the birds, and we are very much obliged and indebted to Mr. Nix, Mr. Cyphers, and Prof. Rice for their remarks and in coming here to help us.

Mr. Robertson: I think for those of us who came here to gain information in raising poultry, it is not an occasion to pass without making special mention of the work done by Mr. Day of the Physics department. He has found time this last year to make some very accurate and careful work on what I think is the unknown part of artificial incubation. We have been going in the dark. We thought we had theories, and we concluded that a certain thing would be so, and then found out that results were the opposite to what we expected. I do not believe that an incubator will, as now constructed, hatch equal to the hen. I think we will have to know how the hen does the work. It is all right to have fresh air. I thoroughly appreciate the work done by Mr. Day, and I would move a resolution asking the Government to continue this work until we get some definite information. This is the most practical work that the Institute has to accomplish, and I would like to see this work done right in Canada. We have heard of the work done by Prof. Rice, but I think the foundation is hatching. If we cannot get our birds hatched right, we cannot feed them right. I would move that the Government be asked to keep Mr. Day at this work, and let us have some definite conclusions.

Mr. Black: In conversation with Mr. Graham, some questions came up which it struck me should be referred to before we left. I was one of the members of the short course, who was unfortunate in not being able to attend all the meetings. I was kept away during the last two weeks. However, I have attended the meetings of this Institute, and it strikes me that we have learned some very valuable lessons, and perhaps the most important of these lessons is the fact that most of the people who are in the business scientifically, and those who are in the business practically, in a large way, are much at sea.

Those who are to make a success in the poultry business must work, and with all the success that Mr. McNeil has made in the business it is more than possible there are some of the new things that he does not readily take to, and one of these things is hopper-feeding. It strikes me that the whole thing in this business, and the thing of most importance, is vigor. He said to us:

"Put up a big sign in your yards with 'Vigor' on it," but the question is, How shall we best attain it? It strikes me that there is only one way to procure it, and I believe that is one of the conclusions that we are coming to.

I believe that beyond question we have learned this, and Mr. Graham has brought out that fact in one of the experiments on raising vigorous birds in the corn field last year. Mr. Baldwin had the pleasure of seeing those birds, the best birds at six months that you ever saw. I believe in this case, to have vigorous birds, we must have the free range. In order to get vigor and vitality we must have the free range; and if we have that, the little chicks will balance their own ration, by having the best quality of food before them; and if they are hopper-fed and have a free range we will get vitality and get 80 or 90 per cent. of a hatch. I take pleasure in seconding the motion. The resolution was then put and carried.

Mr. Graham: In this work of experimenting, you need, in my estimation, a practical man and a scientific man together. You need the best scientist you can get to work out the problems, and the practical man to keep them going. I doubt whether you can get a practical man to carry out these scientific experiments in detail; and for that reason, if we are going to advance along this line, we must use our scientist, and Mr. Day is a splendid co-operator. He works with me to the best advantage, and I know you feel you would like to have his services retained in connection with this department, and I am delighted to hear what you have said along this line.

Mr. Nix: I do not know whether you would like to have the opinion of a stranger on this subject, but I have been connected with this work for over twenty-five years, and I have tried to make myself familiar with the work. I have tried to keep in touch with every experiment. We will say for the credit of this station, both for the directors and Mr. Day, that it is the most accurate and satisfactory work that has ever been done in the history of artificial incubation; and while you are working hard for the interests of Canada, you cannot confine this work to this station or this Province, because the interest in artificial incubation is world-wide, and it reaches beyond the confines of this Province. The work you are doing here is most valuable, and I think we appreciate it down in the States, probably more than you do locally. I would be sorry if anything should occur from any source whatever to put a stop to this work, because it is so important, and it has been done so well, that I hope it will be continued. (Applause.)

The Chairman: I know we must all appreciate the expression of opinion from Mr. Nix, coming as it does from an outsider.

After a cordial vote of thanks to Mr. Baldwin for his excellent work as chairman, the Institute meeting was declared adjourned.

REPORT

OF THE

WOMEN'S INSTITUTES

OF THE

Province of Ontario

1906

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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TORONTO

To the Honourable WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR :

I have the pleasure to present herewith for the consideration of your Honour the Report of the Women's Institutes of Ontario for 1906.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1906.

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WOMEN'S INSTITUTES OF ONTARIO.

1906.

ANNOUNCEMENT OF THE SUPERINTENDENT.

The time has now arrived to report the year's work ending June, 1906, and we are pleased to be able to record a marked growth. The number of organizations is considerably in excess of the previous year, and the total membership at the end of May was 10,479. A change was made in the membership year, by which both the membership and financial year end May 31. It is difficult, therefore, to make an exact comparative statement with previous years. The figures indicate, however, that there has been a marked growth in the number of organizations, meetings held, and membership.

Women's Institute work was undertaken for the first time this year in the Rainy River, Lake of the Woods and Temiscamingue Districts, with the result that some twenty organizations were formed; and from the enthusiasm shown by the newly appointed officers and members there is every indication of effective work being accomplished. There is no section of the Province where Women's Institute work should be more highly appreciated than in those sections where the women on the farms do not enjoy the privileges of the older sections of the Province, so far as social advantages, lectures, literature, etc., are concerned.

We wish most sincerely to express our gratefulness to the many officers throughout the Province who have put so much time and labor in the work, more especially as new rules and regulations have not yet been printed for the guidance of the officers, that they may the better deal with the new conditions which are arising from the establishment of so many branches. Much difficulty has been experienced in formulating rules. Officers will be pleased to note that permission has been obtained to publish from time to time, say every two months, a bulletin dealing quite exhaustively with one or more subjects, the same to be used by officers and members as a basis for their programmes of work from month to month, if they so desire. The periodical which was recognized as the official organ of Institutes last year, ceased publication early in 1906, and thus left the Institute officers considerably handicapped in their attempts to carry on the monthly meetings regularly. The issuing of periodical bulletins for the members will no doubt be found of great assistance in guiding the work of the Institute.

Grants.

The liberality of the Department in giving a small grant to each branch Institute has had the effect of stimulating the work. This has been an encouragement and inspiration to the officers and has enabled them to do much more effective work. Grants are being paid this year only to those Institutes which have held four meetings during the year ending May 31, which have a membership of 15, and have furnished satisfactory financial statements to the Department.

We wish to draw the attention of our readers to the report of the annual convention which appears herein. Much of interest to all members will be found therein, while officers generally will be much benefited by the advice of officers who have been successful in their local institute work.

GEO. A. PUTNAM,
Superintendent.

REPORTS OF LOCAL WOMEN'S INSTITUTES

No.	Institute District.	Receipts.										Grants.	
		Membership for 17 months, ending May 31st, 1906.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Cash on hand per last Report.		Members' Fees.					
						$	c.	$	c.	$	c.		
1	Amherst Island	53	13	553	16	24	76	9	25	20	00		
2	Brant, North	174	42	1297	93	48	62	10	50	25	00		
3	Brant, South	222	30	878	54	41	17	23	91	51	00		
4	Bruce, Centre	110	30	538	36	33	08	17	25	56	00		
5	Bruce, North	65	2	32	7								
6	Bruce, South	41	10	237	17	38	12	8	50	45	00		
7	Bruce, West	156	25	515	35	39	99	18	25	45	00		
8	Dufferin	233	63	2010	138	31	42	39	25	69	00		
9	Dundas	56	12	160	10	6	69	9	75	16	00		
10	Durham, East	163	13	175	17	31	62	38	50	64	00		
11	Durham, West	83	40	1070	93	34	74	20	50	60	00		
12	Elgin, East	156	24	1055	42	58	07	21	95	60	00		
13	Elgin, West	44	6	237	10	1	12	5	50	60	00		
14	Essex, North	141	16	401	22	8	75	20	30	29	00		
15	Grey, Centre	298	93	3024	105	73	05	50	00	69	00		
16	Grey, North	164	59	1409	51	27	71	39	75	65	00		
17	Grey, South	68	30	675	62	17	58	14	00	46	00		
18	Haldimand	393	89	2526	151	49	10	44	10	81	00		
19	Halton	603	93	3626	184	116	92	59	75	86	00		
20	Hastings, East	308	38	801	64	78	69	45	75	75	00		
21	Hastings, North	269	29	572	46	44	68	19	55	41	00		
22	Hastings, West	96	13	520	37	24	10	11	75	20	00		
23	Huron, East	148	49	518	38	6	58	30	00	43	00		
24	Huron, South	73	11	347	14	26	65	5	90	58	50		
25	Kent, West	24	7	194	11	1	95	1	50	30	00		
26	Huron, East	225	52	1965	84	21	66	28	75	41	00		
27	Kent, West	112	26	955	69	37	70	9	00	53	00		
38	Lambton, East	32	9	224	10	5	20	2	50	20	00		
29	Lambton, West	31	9	114	14		14	5	00	30	00		
30	Lennox	52	8	84	8	1	92	12	50	19	00		
31	Lincoln	188	19	666	35	8	63	46	00	45	00		
32	Middlesex, North	396	62	2435	115	70	16	72	28	62	00		
33	Middlesex, West	59	13	265	23	25	99	5	50	34	00		
34	Monck	81	18	362	12	8	02	12	75	37	50		
35	Muskoka, South	79	23	358	38	16	21	17	00	37	00		
36	Norfolk, North	58	8	119	16	23	26	1	50	30	00		
37	Northumberland, East	210	36	1709	69	62	00	27	00	57	50		
38	Northumberland, West	236	40	701	60	18	20	23	25	55	00		
39	Ontario, North	52	8	90	7	21	35	6	50	30	00		
40	Ontario, South	90	32	821	57	16	54	18	50	53	00		
41	Oxford, North	96	27	634	44	4	95	17	00	69	00		
42	Oxford, South	287	65	2066	73	65	65	32	50	104	35		
43	Peel	541	67	2429	161	28	85	86	75	49	00		
44	Perth, North	75	5	265	14	18	92	6	25	29	00		
45	Perth, South	35	11	437	16	22	83	5	00	25	00		
46	Peterboro, East	52	13	335	12	35	22	4	00	20	00		
47	Peterboro, West	75	9	223	12	5	73	17	75	20	00		

FOR THE YEAR ENDING MAY 31st, 1906.

Receipts—*Con.*			Expenditures.									
Receipts from Conventions and Excursions.	Miscellaneous.	Total Receipts.	Expenses for Meetings.	Secretary's Salary, etc.	Postage and Stationery.	Printing and Advertising.	Lecturers' Expenses.	Periodicals for Members.	Miscellaneous.	Total Expenditures.	Balance on hand.	Total.	No.
$ c	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	2 00	56 01	19 00	9 00	2 30	1 00	6 50	13 50	.....	51 30	4 71	56 01	1
.....	1 75	85 87	26 25	10 00	6 26	5 00	12 80	4 45	10 21	74 97	10 90	85 87	2
.....	15 80	131 88	19 67	15 00	16 20	2 50	11 95	.....	10 20	75 52	56 36	131 88	3
.....	77	107 10	10 12	7 00	3 86	50	24 50	12 70	2 77	61 45	45 65	107 10	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	41	92 03	3 55	10 00	92	4 00	7 85	.....	4 95	31 27	60 76	92 03	6
.....	11 00	114 24	49 69	10 00	5 01	2 75	7 00	11 35	14 25	100 05	14 19	114 24	7
62 85	8 95	211 47	21 54	44 00	7 61	15 65	28 90	18 25	17 34	153 29	58 18	211 47	8
.....	.....	32 44	11 45	.....	5 54	.....	.....	.....	.....	16 99	15 45	32 44	9
.....	8 55	142 67	1 58	2 40	3 38	.....	.....	10	83 54	91 00	51 67	142 67	10
.....	55	115 79	15 00	10 00	7 11	10 25	6 55	15 10	1 30	65 31	50 48	115 79	11
.....	1 30	141 32	13 85	25 00	5 05	13 80	21 80	.....	44 80	124 30	17 02	141 32	12
.....	3 14	70 06	11 50	10 00	4 31	3 00	8 25	.....	13 02	50 08	19 98	70 06	13
.....	5 29	63 34	7 00	10 00	2 40	9 60	4 30	.....	3 10	36 40	26 94	63 34	14
.....	41 60	233 65	22 00	10 75	11 19	9 25	45	22 75	47 29	123 68	109 97	233 65	15
.....	11 17	143 63	7 41	15 00	7 93	5 91	14 83	3 43	38 63	93 14	50 49	143 63	16
.....	4 24	81 82	19 05	10 00	2 89	8 00	23 55	1 00	5 05	69 54	12 28	81 82	17
.....	20 90	195 10	7 20	12 10	7 59	7 00	3 50	6 17	20 92	64 48	130 62	195 10	18
.....	51 48	314 15	19 85	60 50	13 27	15 45	17 27	21 40	75 56	323 30	90 85	314 15	19
.....	13 20	242 64	6 45	62 25	4 24	8 30	11 95	7 76	98 16	199 11	43 53	242 64	20
.....	14 86	120 09	10 82	10 00	3 31	2 50	20	8 17	13 86	48 86	71 23	120 09	21
.....	85	56 70	1 00	10 00	7 23	4 50	.....	.....	10 00	32 73	23 97	56 70	22
22 95	17	102 70	31 90	23 75	2 91	5 94	7 00	2 30	21 28	95 08	7 62	102 70	23
.....	23 24	114 29	12 90	10 00	4 62	9 50	11 15	5 53	37 40	91 10	23 19	114 29	24
.....	.....	33 45	6 50	.....	1 75	1 50	4 65	.....	1 95	16 35	17 10	33 45	25
.....	78 45	169 86	16 60	.....	2 60	2 50	16 00	10 65	87 18	135 53	34 33	169 86	26
.....	14 85	114 55	33 81	10 00	9 78	4 00	9 05	2 67	6 65	75 96	38 59	114 55	27
.....	05	27 75	12 01	5 00	30	.....	7 25	.....	.....	24 56	3 19	27 75	28
.....	.....	35 14	.....	.....	3 45	1 25	7 00	.....	5 15	16 85	18 29	35 14	29
.....	.....	33 42	.....	10 50	76	1 00	.....	10 07	3 10	25 43	7 99	33 42	30
.....	13 05	112 68	4 00	30 00	6 36	1 50	23 69	.....	30 89	96 44	16 24	112 68	31
16 58	5 75	226 77	19 85	25 00	8 20	8 54	1 92	1 91	53 51	118 93	107 84	226 77	32
.....	1 86	67 35	11 05	.....	1 46	2 75	13 65	20 87	12	49 90	17 45	67 35	33
.....	.....	58 27	3 00	10 00	5 26	.....	15 23	1 00	16 09	50 58	7 69	58 27	34
.....	27 68	97 89	1 00	8 00	3 96	.....	.....	4 15	10 00	27 11	70 78	97 89	35
.....	.....	54 76	3 00	10 00	2 08	1 50	1 60	.....	2 34	20 52	34 24	54 76	36
.....	24 58	171 58	4 50	20 00	9 26	9 90	7 75	40 30	27 80	119 51	51 57	171 58	37
.....	31 85	128 30	10 25	25 50	4 95	4 50	28 93	2 00	9 53	85 66	42 64	128 30	38
.....	.....	57 85	13 10	10 00	6 50	6 60	.....	.....	.....	36 20	21 65	57 85	39
.....	10 36	98 40	5 00	10 00	6 74	9 00	8 55	65	4 90	41 84	53 56	98 40	40
.....	.....	90 95	18 75	21 10	2 62	9 10	11 57	.....	80	63 94	27 01	90 95	41
.....	4 39	206 89	73 47	20 00	15 33	5 30	7 77	2 65	25	124 77	82 12	206 89	42
.....	16 75	181 35	15 85	51 15	13 84	18 50	4 70	50	11 79	116 33	65 02	181 35	43
.....	8 44	62 61	5 75	11 00	95	.....	5 30	1 00	2 00	26 00	36 61	62 61	44
.....	5 33	58 16	8 00	.....	1 50	.....	4 00	3 50	13 45	30 45	27 71	58 16	45
.....	19 55	78 77	3 50	.....	.....	.....	.....	10 00	55 00	68 50	10 27	78 77	46
.....	.....	43 48	15 00	10 00	2 13	3 60	2 00	2 50	.....	35 23	8 25	43 48	47

REPORTS OF LOCAL WOMEN'S INSTITUTES

No.	Institute District.	Receipts.						
		Membership for 17 months, ending May 31st, 1906.	No. of Meetings held.	Total attendance.	No. of papers read or addresses delivered.	Cash on hand per last report.	Members' Fees.	Grants.
						$ c.	$ c.	$ c.
48	Renfrew, North	78	28	366	36	7 20	10 25	48 00
49	Simcoe, Centre	140	48	1148	95	16 30	32 50	69 00
50	Simcoe, South	66	9	439	20	20 27	22 25	31 00
51	Simcoe, West	229	35	980	50	31 25	35 25	93 00
52	Union	89	6	214	10	4 79	4 75	31 50
53	Victoria, East	109	19	539	36	12 78	11 25	35 00
54	Victoria, West	62	21	349	30	17 28	16 75	43 00
55	Waterloo, North	142	26	1540	62	37 54	31 25	35 00
56	Waterloo, South	349	12	820	26	.....	25 50	30 00
57	Welland	222	26	707	50	32 66	39 50	56 00
58	Wellington, Centre	139	83	3597	122	34 67	36 25	71 00
59	Wellington, East	189	28	1487	72	15 33	30 75	41 00
60	Wellington, South	117	48	1035	92	55 15	24 25	62 00
61	Wellington, West	190	39	2243	75	79 01	10 25	62 00
62	Wentworth, North	77	33	948	15	32 65	22 25	35 00
63	Wentworth, South	273	89	1846	93	44 71	70 25	117 00
64	York, East	173	36	346	53	25 37	26 50	86 50
65	York, West	165	25	789	43	5 60	41 75	54 00
	Northern Institutes.							
1	Algoma, Centre	123	35	513	58	.....	26 75	15 00
2	Algoma, East	15	6	159	11	.....	.....	.....
3	Manitoulin, East	59	11	195	17	.....	11 00	.....
4	Manitoulin, West	130	4	50	9	.....	.....	.....
5	Nipissing, West	10	3	114	5	.....	.....	.....
6	St Joseph's Island	76	7	61	5	.....	20 00	5 00
7	Parry Sound, East	54	21	313	36	.....	.....	.....
8	Rainy River	.....	12	302	17	.....	.....	.....
9	Thunder Bay	.....	7	165	12	.....	.....	.....
	Totals	10479	2114	51892	3452	$1857	$1572	$3155

* The membership year has been changed from "January to December" to "June to May." The total membership reported is, therefore, for seventeen months, but no names are counted twice.

FOR THE YEAR ENDING MAY 31st, 1906.—*Continued.*

Receipts—*Contin.*			Expenditures									
Receipts from Conventions and Excursions.	Miscellaneous.	Total Receipts.	Expenses for Meetings.	Secretary's Salary, etc.	Postage and Stationery.	Printing and Advertising.	Lecturers' Expenses.	Periodicals for Members.	Miscellaneous.	Total Expenditures.	Balance on hand.	Total.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	6 50	71 95	1 50	5 00	2 29	70	6 00	19 75	9 45	44 69	27 26	71 95	48
.....	24 15	141 95	24 25	15 00	7 27	4 25	50	5 38	29 56	86 21	55 74	141 95	49
.....	8 40	81 92	10 20	20 00	3 53	1 58	4 50	6 50	12 45	58 76	23 16	81 92	50
.....	79 79	239 29	60 31	15 00	4 24	4 75	.....	59 85	39 73	183 88	55 41	239 29	51
.....	25 27	66 31	12 45	6 00	3 59	3 25	70	28 00	4 00	57 99	8 32	66 31	52
20 40	10	79 53	3 50	23 50	2 01	30 35	.....	9 85	.....	69 21	10 32	79 53	53
8 00	4 25	89 28	7 99	26 10	3 62	25	1 50	.....	10 75	50 21	39 07	89 28	54
.....	.....	103 79	5 54	12 50	5 46	94	12 55	1 85	9 50	48 34	55 45	103 79	55
31 59	.....	87 09	14 78	31 50	5 36	17 75	10 55	.....	3 09	83 03	4 06	87 09	58
.....	1 20	129 36	4 57	7 50	4 05	2 13	5 25	18 15	4 20	40 85	88 51	129 36	57
.....	39	142 31	26 24	37 05	8 38	9 25	4 20	2 00	5 70	92 82	49 49	142 31	58
.....	.....	87 08	22 97	10 00	7 44	5 50	3 75	11 30	1 24	62 20	24 88	87 08	59
2 15	4 35	147 90	33 50	.....	5 32	1 00	4 65	27 25	18 20	89 92	57 98	147 90	60
30 50	2 74	184 50	41 67	20 00	8 34	9 00	11 46	.....	18 88	109 35	75 15	184 50	61
.....	4 21	94 11	13 25	15 00	3 19	4 50	.....	15 50	6 97	58 41	35 70	94 11	62
.....	45 89	277 85	41 09	11 00	42 60	27 50	13 90	5 80	28 38	170 27	107 58	277 85	63
.....	.....	138 37	20 73	27 65	10 12	7 00	21 05	13 00	9 84	109 39	28 98	138 37	64
30 00	.....	131 35	17 00	15 00	6 01	10 25	28 05	3 00	10 45	89 76	41 59	131 35	65
20 50	54 90	117 15	50	.....	5 03	6 50	.....	29 62	19 35	61 00	56 15	117 15	1
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
.....	.....	11 00	.....	.....	1 54	.....	.....	2 00	50	4 04	6 96	11 00	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	25 00	25	.....	2 13	.....	.....	.....	1 25	3 63	21 37	25 00	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9
$245	$797	$7626	$995	$972	$386	$382	$539	$522	$1160	$4957	$2269	$7626	

OFFICERS FOR 1906-7.

Superintendent, GEO. A. PUTNAM, Parliament Buildings, Toronto.

DISTRICT INSTITUTES.

Institute.		Name.	P.O. Address.
Amherst Island	President	Mrs. R. D. McDonald	Emerald.
	Vice-President	Mrs. Henry Filson	Stella.
	Sec.-Treas.	Mrs. S. K. Tugwell	Stella.
Brant, N.	Hon. President	Mrs. Dr. Kitchen	St. George.
	President	Mrs. Jas. Heveron	St. George.
	1st Vice-President	Mrs. A. Humphrey	St. George.
	2nd Vice-President	Mrs. F. Dond	Branchton.
	3rd Vice-President	Mrs. H. Freeman	St. George.
	Sec.-Treas.	Miss Edith Burt	St. George.
Brant, S.	Hon. President	Mrs. J. N. Lester	Burford.
	President	Mrs. J. E. Brethour	Burford.
	Vice-President	Mrs. A. D. Muir	Burford.
	Sec.-Treas.	Miss E. A. Lester	Burford.
	Asst.-Sec.	Miss Mary Metcalf	Burford.
Bruce, C.	President	Mrs. D. McIntyre	Paisley.
	Vice-President	Mrs. T. F. Jackson	Ripley.
	Sec.-Treas.	Mrs. J. C. Seymour	Paisley.
Bruce, N.	President	Miss D. Davidson	Lion's Head.
	Vice-President	Mrs. W. B. Moore	Lion's Head.
	Sec.-Treas.	Mrs. D. Thompson	Lion's Head.
Bruce, S.	President	Miss Bessie Rowand	Walkerton.
	Sec.-Treas.	Mrs. E. McConnell	Walkerton.
Bruce, W.	President	Mrs. D. McTavish	North Bruce.
	1st Vice-President	Mrs. Jno. Thompson	Port Elgin.
	2nd Vice-President	Miss J. Richardson	North Bruce.
	Sec.-Treas.	Mrs. Jas. S. Cameron	Port Elgin.
Dufferin	President	Mrs. R. Fife	Shelburne.
	1st Vice-President	Mrs. W. C. Hall	Shelburne.
	2nd Vice-President	Mrs. (Dr.) Barr	Shelburne.
	Sec.-Treas.	Mrs. J. J. Hall	Shelburne.
Dundas	President	Mrs. T. J. White	Chesterville.
	Vice-President	Miss McGee	Chesterville.
	Sec.-Treas.	Mrs. Chester Casselman.	Chesterville.
Durham, E.	President	Mrs. D. Milligan	Millbrook.
	1st Vice-President	Mrs. W. Gillott	Millbrook.
	2nd Vice-President	Mrs. H. Hassard	Millbrook.
	Sec.-Treas.	Mrs. J. R. Eakins	Millbrook.
Durham, W.	President	Mrs. T. Power.	Bowmanville.
	Vice-President	Mrs. G. C. Haines	Bowmanville.
	Sec.-Treas.	Miss E. E. Hayeraft	Bowmanville.
Elgin, E.	Hon. President	Dr. Annie Backus	Aylmer.
	President	Mrs. M. E. Lyons	Aylmer.
	1st Vice-President	Mrs. L. A. Brown	Aylmer,
	2nd Vice-President	Mrs. F. Paupst	Aylmer.
	Sec.-Treas.	Mrs. I. R. Prichard	Springfield.
	Asst. Sec.	Mrs. M. Turrill	Aylmer.
Elgin, W.	President	Mrs. Dan Graham	Dutton.
	Vice-President	Mrs. Arch. McWilliam	Dutton.
	Sec.-Treas.	Miss Minnie C. Gow	Wallacetown.
Essex, N.	President	Mrs. A. W. Cohoe	South Woodslee.
	Sec.-Treas.	Miss Edna Allison	South Woodslee.
Grey, C.	President	Mrs. J. I. Graham	Vandeleur.
	Vice-President	Mrs. R. Best	Flesherton.
	Sec.-Treas.	Mrs. A. E. Myles	Kimberley.

Grey, N.	Hon. President	Mrs. Jas. Gardner	Kemble.
	President	Mrs. Jos. Davidson	Lake Charles.
	1st Vice-President	Mrs. Wm. Whitelaw	Meaford.
	2nd Vice-President	Mrs. A. M. Taylor	Annan.
	Sec.-Treas.	Mrs. B. J. Long	Meaford.
Grey, S.	President	Mrs. D. McCrie	Durham.
	Vice-President	Mrs. C. Grey	Varney.
	Sec.-Treas.	Mrs. Thos. McGirr.	Durham.
Haldimand	President	Mrs. E. E. Phillips	Selkirk.
	Vice-President	Mrs. J. Richardson	Caledonia.
	Sec.-Treas.	Mrs. W. M. Thompson	Canfield.
Halton	President	Mrs. L. L. Bennett	Georgetown.
	Sec.-Treas.	Miss Hattie Cook	Georgetown.
Hastings, E.	President	Mrs. A. Loucks	Foxboro.
	Vice-President	Mrs. T. E. Wilson	Tweed.
	Sec.-Treas.	Mrs. Currie English	Melrose.
Hastings, N.	President	Mrs. Wm. Meiklejohn	Bellview.
	Vice-President	Mrs. T. H. Reid	Bellview.
	Sec.-Treas.	Mrs. Jas. McComb	Bellview.
Hastings, W.	President	Mrs. J. Phillips	Wallbridge.
	Vice-President	Mrs. D. Coone	Frankford.
	Sec.-Treas.	Miss M. Jordon	Frankford.
Huron, E.	President	Mrs. W. G. Strong	Gorrie.
	Vice-President	Mrs. Wm. Goggins	Fordwich.
	Sec.-Treas.	Mrs. Jas. Armstrong	Gorrie.
Huron, S.	President	Miss J. Halls	Exeter.
	Vice-President	Mrs. F. Knight	Exeter.
	Sec.-Treas.	Mrs. A. Hastings	Exeter.
Huron, W.	President	Mrs. Wm. Jenkins	Holmesville.
	1st Vice-President	Mrs. S. Clark	Goderich.
	2nd Vice-President	Mrs. W. Bone	Wingham.
	Sec.-Treas.	Mrs. F. W. Watts	Clinton.
Kent, E.	President	Mrs. J. F. Stone	Highgate.
	Vice-President	Mrs. Souls	Highgate.
	Sec.-Treas.	Miss Etta Gosnell	Highgate.
Kent, W.	President	Mrs. Ed. LaMarche	Wheatley.
	Vice-President	Miss Dora Richards	Quinn.
	Sec.-Treas.	Miss S. Kennedy	Wheatley.
Lambton, E.	President	Mrs. Jno. Hunter	Wyoming.
	Vice-President	Mrs. Jno. Forbes	Kerteh.
	Sec.-Treas.	Miss Addie Steadman	Wyoming.
Lambton, W.	President	Mrs. Wm. Tucker	Brigden.
	Vice-President	Mrs. Wm. Jackson	Osborne.
	Sec.-Treas.	Mrs. Jno. Ettles	Brigden.
Lennox	President	Mrs. Wm. Magee	The Pines.
	Vice-President	Miss M. Gibbs	Adolphustown.
	Sec.-Treas.	Miss Lilien Carr	Dorland.
Lincoln	President	Mrs. Duncan	Jordan Harbor.
	1st Vice-President	Mrs. W. B. Rittenhouse	Beamsville.
	2nd Vice-President	Mrs. M. Culp	Jordan.
	Sec.-Treas.	Mrs. E. W. Fry	St. Catharines.
Middlesex, E.	President	Mrs. P. Stewart	Parkhill.
	Vice-President	Miss Mae Willson	Greenway.
	Sec.-Treas.	Miss B. A. Muma	Coldstream.
Middlesex, W.	President	Mrs. Jas. Bogue	Strathroy.
	Vice-President	Mrs. M. Diggins	Strathroy.
	Sec.-Treasurer	Mrs. M. W. Cummiford	Strathroy.
Monck	President	Mrs. R. McOuett	Marshville.
	Vice-President	Mrs. Chas. Palmer	Marshville.
	Sec.-Treas.	Mrs. Angus Campbell	Marshville.
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	Sec.-reas.	Mrs. A. B. Olimer	Parkersville.
Muskoka, S.	President	Mrs. C. Faires	Muskoka Falls.
	Vice-President	Miss C. Evans	Muskoka Falls.
	Sec.-Treas.	Mrs. J. T. Galbraith	Reay.

Norfolk, N.	President	Mrs. Frank Jarvis	Simcoe.
	Vice-President	Mrs. A. R. Decou	Simcoe.
	Sec.-Treas.	Mrs. Safford C. Kitchen	Bloomsburg.
Northumberland, E.	President	Mrs. Esti Terrell	Wooler.
	1st Vice-President	Mrs. Royal McQuoid	Smithfield.
	2nd Vice-President	Mrs. W. H. Dempsey	Wooler.
	3rd Vice-President	Mrs. E. Love	Trenton.
	Sec.-Treas.	Miss Kate Murray	Trenton.
Northumberland, W.	President	Mrs. R. C. Allen	Cobourg.
	Vice-President	Mrs. W. J. Huston	Cobourg.
	Sec.-Treas.	Mrs. J. J. Hinman	Cobourg.
Ontario, N.	President	Mrs. W. Lapp	Uxbridge.
	Vice-President	Mrs. D. Ferguson	Uxbridge.
	Sec.-Treas.	Mrs. C. S. Goodrich	Uxbridge.
Ontario, S.	President	Mrs. Wm. Purves	Columbus.
	1st Vice-President	Mrs. J. B. Mitchell	Whitby.
	2nd Vice-President	Mrs. R. R. Mowbray	Kinsale.
	Sec.-Treas.	Miss Dell. Brown	Whitby.
Oxford, N.	President	Mrs. D. Dewar	Bright.
	Vice-President	Mrs. J. Craig	Bright.
	Sec.-Treas.	Miss B. Gilholm	Bright.
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	1st Vice-President	Mrs. W. A. Elliott	Brownsville.
	2nd Vice-President	Mrs. H. A. Strathick	Springford.
	Sec.-Treas.	Mrs. J. C. Smart	Springford.
Peel	President	Mrs. Jas. Davidson	Inglewood.
	Vice-President	Mrs. W. J. Hunter	Brampton.
	Sec.-Treas.	Miss Susie Campbell	Brampton.
Perth, N.	President	Mrs. W. Connell	Milverton.
	1st Vice-President	Mrs. H. Scheafer	Milverton.
	2nd Vice-President	Mrs. J. T. Grosch	Milverton.
	Sec..Treas.	Mrs. A. D. Alexander	Milverton.
Perth, S.	President	Mrs. Ball	Tavistock.
	Sec.-Treas	Miss Ethel Norris	Cromarty.
Peterboro, E.	President	Mrs. Dr. Douglas	Warsaw.
	Vice-President	Mrs. Geo. Taylor	Warsaw.
	Treasurer	Mrs. Steedham	Warsaw.
	Cor. Sec	Mrs. Brown	Warsaw.
	Rec. Sec	Miss Annie Hawthorne	Warsaw.
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	Vice-President	Mrs. J. Lemay	Lakefield.
	Sec.-Treas	Mrs. G. Fitzgerald	Lakefield.
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	Vice-President	Mrs. H. B. Christman	Beachburg.
	Sec.-Treas	Mrs. Jno. A. Binnie	Beachburg.
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	Vice-President	Mrs. H. G. Todd	Randolph.
	Sec.-Treas.	Mrs. W. N. Belyea	Wyebridge.
Simcoe, S.	President	Mrs. R. W. Sloan	Churchill.
	Vice-President	Mrs. Jas. Allen	Churchill.
	Sec.-Treas	Mrs. W. S. Moore	Churchill.
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	Vice-President	Mrs. F. E. Webster	Creemore.
	Sec.-Treas	Miss A. Ovens	Duntroon.
Union	President	Mrs. Mary Miller	Clifford.
	Vice-President	Mrs. J. Scott	Clifford.
	Sec-Treas	Miss N. Carter	Clifford.
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	Vice-President	Mrs. Dr. Gould	Fenelon Falls.
	Sec-Treas	Miss Emily Nie	Fenelon Falls.
Victoria, W.	President.	Mrs. D. W. King	Oakwood.
	Vice-President	Mrs. E. Y. Yers	Little Britain.
	Sec-Treas.	Mrs. Jas. Birchard	Linden Valley.
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	Vice-President	Mrs. Lackner	Hawkesville.
	Sec.-Treas	Miss Lucinda Bellinger	Wellesley.

Waterloo, S	President	Mrs. Thomas Shaw	Hespeler.
	Vice-President	Mrs. J. Jamieson	Hespeler.
	Sec.-Treas	Mrs. Will Elliott	Galt.
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	Vice-President	Mrs. Joe Clark	Ridgeway.
	Sec.-Treas	Miss M. Willson	Welland.
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	Vice-President	Mrs. M. McKinnon	Hillsburg.
	Sec-Treas	Mrs. Jas. McLachlan	Erin.
Wellington, E	President	Mrs. J. P. Beer	Arthur.
	Vice-President	Mrs. Wm. Anderson	Damascus.
	Sec-Treas	Miss Mary Wales	Arthur.
Wellington, S	President	Mrs. Wm. Harris	Rockwood.
	Vice-President	Miss Lang	Corwhin.
	Sec-Treas	Miss Alice Whitelaw	Guelph.
Wellington, W	President	Mrs. W. Brimblecombe	Drayton.
	Vice-President	Mrs. F. Short	Moorefield.
	Sec-Treas	Mrs. L. M. Clemens	Drayton.
Wentworth, N	President	Mrs. Dr. Gibson	Lynden.
	Vice-President	Mrs. J. F. Thompson	West Flamboro.
	Sec.-Treas	Mrs. J. E. McDonough	Westover.
Wentworth, S	President	Mrs. J. H. McNeilly	Stoney Creek.
	1st Vice-President	Mrs. Erland Lee	Stoney Creek.
	2nd Vice-President	Mrs. Beven	Ancaster.
	3rd Vice-President	Mrs. Henry French	Hannon.
	Sec-Treas	Miss J. R. Carpenter	Fruitland.
York, E	President	Mrs. R. Forfar	Ellesmere.
	Vice-President	Mrs. D. Marshall	Ellesmere.
	Lec.-Treas	Miss Lula Reynolds	Scarboro Jct.
York, N	President	Mrs. Chas. Doane	Weston.
	Vice-President	Mrs. Ezra Lundy	Weston.
	Sec.-Treas	Miss Bessie Clelland	Newmarket.
York, W	President	Mrs. Wm. Ellerby	Newmardet.
	1st Vice-President	Mrs. La. R. Lemaire	Newmarket.
	2nd Vice-President	Mrs. J. D. McLean	Woodbridge.
	Sec.-Treas	Miss Helen J. Grubbe	Thistletown.

Branch Institutes.

Name of Branch.	President.	Secretary.
North Brant.		
Moyle and Tranquility	Mrs. Nunnick, Brantford	Miss M. E. Good.
Onondaga	Mrs. M. Simpson	Mrs. J. W. Hedley.
Paris	Miss E. O'Neil,	Mrs. M. Deans.
South Brant.		
Mohawk	Mrs. Hull	Mrs. T. H. Mott.
Cathcart	Mrs. R. Warboys	Miss C. Stephenson.
Ohsweken	Mrs. Robert Martin	Miss L. Jamieson.
Centre Bruce.		
Kincardine	Miss A. McCaskill	Miss M. McCosh.
Paisley	Mrs. D. McIntyre	Mrs. J. C. Seymour.
Ripley	Mrs. R. J. Graham	Miss J. Pritchard.
South Bruce.		
Holyrood		Miss M. Langford.
Walkerton	Miss Bessie Rowand	Miss E. McConnell.
West Bruce.		
Tara	Mrs. G. Hooper	Miss G. Brunton.
Allenford	Mrs. Thomas Dorman	Miss M. C. Hewitson.
Dufferin.		
Horning's Mills	Mrs. (Rev.) Eccelson	Miss M. Holmes.
Perm	Mrs. James Banks	Miss E. Ferris.
Relessey	Mrs. Mills	Miss C. McGuire.
Laurel	Mrs. B. Curry	Mrs. E. Richardson.
Honeywood	Mrs. Jno. McLean	Mrs. Geo. Laking.
Camilla	Miss McNaughton	Mrs. O. Banks.
Orangeville	Mrs. H. Endicott	Mrs. D. McPherson.
Whittington	Mrs. L. Leader	Miss K. Clark.

Name of Branch.	President.	Secretary.
Dundas.		
Morewood	Mrs. C. Smirl	Mrs. W. E. McConnell.
East Durham.		
Garden Fill	Mrs. Wilson	Miss S. E. Gray.
Mt. Pleasant	Mrs. T. Jamieson	Mrs. A. Rutherford.
Bailieboro	Mrs. Bonns	Mrs. Jno. Greer.
Springville	Mrs. R. Horton	Mrs. A. Sanderson.
West Durham.		
Solina	Mrs. R. J. McKessock	Miss Nora Werry.
Hampton	Mrs. J. G. Burns	Mrs. C. J. Kerslake.
Nestleton	Mrs. Robt. Thompson	Miss Eva J. Malcolm.
Starkville	Miss R. A. Walsh, Orono	Miss M. E. Rutherford,
East Elgin.		
Pt. Burwell	Mrs. R. C. Drake	Miss Beatrice Markle.
Springfield	Mrs. F. C. Muller	Miss Jessie Turner.
West Elgin.		
Rodney	Mrs. E. J. Schmid	Mrs. B. B. Graham.
North Essex.		
Essex	Mrs. A. W. Metcalfe	Mrs. R. W. Anglin.
Oldcastle	Miss J. McCartney	Mrs. Geo. Welsh.
Centre Grey.		
Feversham	Miss L. Guy, Maxwell	Miss E. Alister.
Flesherton	Mrs. T. R. McKenzie, Port Law	Mrs. Wm. Wilcox.
Vandeleur	Mrs. S. Douglas	Mrs. Geo. Warling.
Heathcote	Mrs. R. Thomson	Miss S. Clark.
Ravenna	Mrs. W. Buchan n	Mrs. A. R. Latter.
Kimberley	Mrs. W. Ellis	Miss Clara Hurd.
Walter's Falls	Mrs. T. Barker	Mrs. R. H. Olmstead.
Williamsford	Mrs. W. McMitchell	Mrs. L. Becker.
Priceville	Miss Anna James	Miss J. McArthur.
Hopeville	Mrs. Geo. Gilkes	Mrs. James Scott.
Badgeros	Mrs. Chas. Priddle	Miss E. M. Small.
North Grey.		
Desboro	Mrs. Jno. Milburn	Miss Lizzie Hanbury.
Chatsworth	Mrs. S. H. Breese	Mrs. T. H. Collins.
Kilsyth	Mrs. Ed. Portens, Squire	Mrs. J. H. Moore.
Annan	Mrs. C. P. Day, Leith	Miss N. J. Cannon.
St. Vincent	Mrs. B. J. Long, Meaford	Mrs. W. A. Johnston, Meaford.
Kemble	Mrs. John Ward	Mrs. Jas. Gardner.
Brookholm	Mrs. Vanstone	Mrs. H. A. Nicol.
South Grey.		
Holstein	Mrs. J. Murdock	Mrs. W. Rogers.
Elmwood	Mrs. A. Wilson	Miss E. Tulloch.
Durham	Mrs. D. McCrie	Mrs. T. McGirr.
Hanover	Mrs. Dr. Rogers	Mrs. W. Bartleman.
Haldimand.		
Selkirk	Mrs. A. Lamb	Mrs. E. Kendrick.
York	Mrs. E. Moore	
Clanbrassil	Mrs. Turnbull	Mrs. Jas. McConachie.
DeCewsville	Mrs. R. E. King	Mrs. O. Warner.
Cheapside	Mrs. Dr. Sherk	Mrs. F. D. Awde.
Nanticoke	Mrs. W. Evans	Miss M. E. Kenny.
Canfield	Mrs. J. Badgley	Mrs. W. M. Thompson.
Springvale		Miss L. Winger.
Jarvis	Mrs. Parsons	Miss M. Parkinson.
Sandusk	Mrs. M. Deal	Miss Emma Pond.
South Cayuga	Mrs. B. Albright	Miss Eva Beck.
Caledonia	Mrs. M. Richardson	Miss F. Hudspeth.
Hagersville	Mrs. G. Beam	Mrs. J. Forman.
Halton.		
Moffatt	Mrs. Fletcher	Miss Cusick.
Milton	Mrs. Dr. Robertson	Mrs. S. R. Bews.
Appleby	Mrs. Porter	Mrs. Jas. Leonard.
Georgetown	Mrs. L. L. Bennett	Miss Pierce.
Acton	Mrs. A. F. Brown	Mrs. Geo. Havill.
Burlington	Mrs. E. J. Moore	Misss Jessie Edmonds.
Campbellville	Mrs. Samuel McDowell	Mrs. Robt. Menzies.
Palermo	Mrs. L. Hagar	Mrs. Dr. McCrimmon.

Name of Branch.	President.	Secretary.
Halton.		
Ballinafad	Mrs. B. Thompson	Miss A. J. McClure.
Trafalgar	Mrs. W. F. Brown	Mrs. A. A. Biggar.
Hornby	Mrs. Brownridge	Miss N. E. Lindsay.
Norval	Mrs. Francis Hunter	Miss Annie A. Noble.
Sheridan	Mrs. Geo. Hardy	Miss Bertha Andrew.
Nelson	Miss McLaren	Miss Mitchell.
East Hastings.		
Foxboro	Mrs. A. Loucks	Mrs. L. Hubble.
Tweed	Mrs. N. J. McNair	Mrs. W. B. Huyck.
Melrose	Mrs. D. O. McArthur	Miss Nettie Ray.
Spencer's	Mrs. A. McDonald, Belleville	Mrs. J. D. Collup, Belleville.
North Hastings.		
Springbrook	Mrs. Jas. McComb, Bellview	Mrs. Wm. Meiklejohn.
Queensboro	Mrs. Thos. Campbell	Mrs. R. S. Allen.
Wellman's Corners	Mrs. Robt. Totten	Mrs. John Snarr.
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Turners	Mrs. J. Palmer, Chatterton	Miss B. Giffin, Holloway.
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Forest	Mrs. Lawrie	Miss Sara Pettypiece.
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Arthur	Mrs. Wm. O'Neil	Miss A. Farrill.
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Mindemoya	Mrs. Stocks	Mrs. Caddle.
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Little Current	Mrs. B. H. Turner	Mrs. R. Hay.
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Barrie Island	Mrs. N. E. Jennings	Miss M. E. McLean.
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Ice Lake	Mrs. F. Grenville	Miss B. Laird.
Kagawong	Mrs. J. W. Foster	Miss Kathleen Wiber.
Poplar	Mrs. McGillivray	Miss M. Foster.
Barrie Island	Mrs. J. Jennings, Jr	Miss C. L. Greer.
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Women's Institutes of Ontario

ANNUAL CONVENTION

HELD AT MACDONALD INSTITUTE, ONTARIO AGRICULTURAL COLLEGE, GUELPH, DECEMBER 13 AND 14, 1905.

OPENING ADDRESS.

By Mrs. James Gardner, Kemble.

It was with timidity that I agreed to preside at this opening session of the annual convention of Women's Institutes of Ontario. I remember some years ago having just such a feeling as I have this morning, when the officers of our North Grey Farmers' Institute asked me what I thought of starting a Women's Institute in our district. After having the objects and possible benefits explained, I was pleased indeed at the prospect of having an Institute in North Grey. But when the day of organization came and I was elected president—greatly to my surprise and much against my will—I think I never felt more keenly in my life that I really did not know what to do. However, kind friends encouraged me by saying that if I would do my best they would stand by me. And as I look back I am so proud to see the way the women have stuck to the Institute work. And in the same way I sincerely hope that the delegates at this convention may sympathize with the efforts of the officers at the different sessions, so that this gathering may in every way be as successful as those which have preceded it.

I could not but appreciate and admire the arrangements of the convention last year. We had Mrs. Bews, of Halton, as presiding officer for the opening session, representing the largest Institute in the Province. Then we had Mrs. McNeilly as presiding officer at another session, representing the oldest Institute. But this year, when my turn has come to preside, that old feeling has returned, and I feel that I hardly know what to do.

It must be pleasing to our Superintendent to note the rapidly increasing membership, important development, and the improvement in regulations, which are going on under his management. Mrs. McNeilly said last year she thought he must be a very clever man to manage and control five thousand women, but this year he has undertaken over eight thousand.

Our Women's Institute seems to have brought about a great change in sentiment. I am doubtful if any two words in our English language have had such promotion during the past few years as "home-making" and "housekeeping." Economists tell us that "the homes of a nation are its strongest forts." We are learning through our Women's Institutes that housekeeping is not drudgery, unless we choose to make it so. Of late years, since domestic help has been so hard to procure, and wages have advanced so rapidly, many housewives have been compelled to do all their own work, and, when one would enquire of a friend as to how she was getting along, she

would perhaps acknowledge with reluctance that she was doing "all her own work," and in a tone that would indicate that she was owning up to poverty or something of the kind. But now a lady will announce with pride to her friends, without even being asked, "I am doing all my own work," and we never give the condition or circumstances a second thought. In most cases we would expect greater economy in the household when the mistress is at the helm.

We have adopted as our motto in North Grey, and have it printed on all our programmes, "If you know a good thing pass it on." There is another motto which we were taught at home, and which I have never heard anywhere else, so I will pass it on, viz., "A woman can scoop out with a spoon as fast as a man can scoop in with a scoop-shovel."

I think our convention of last year was a model Institute meeting. We learned of economy, patriotism, and perseverance. Economy was taught by Mrs. Bertha Dahl Laws, in her address on "Plain Food and Plain Living," wherein she urged that we aim to be more self-reliant and more dependent upon our own resources, and not buy, buy, all the time. And we learned of patriotism. I think before the last convention my patriotic spirit must have been quite normal, for when we would receive our American magazines, with the stars and stripes spread all over the covers, and nothing but fourth of July between; or when our American cousins would tell of their wonderful parades and demonstrations and fireworks (the firecrackers being set off by the bundle and by the armful, and not singly as our boys do), I would lose patience and say it was all a waste of time and energy. But last year, you will remember, that Prof. Roberson, in the name of Sir Wm. Macdonald, presented these magnificent buildings—Macdonald Institute, Macdonald Hall and the Consolidated School—to the Hon. John Dryden, then Minister of Agriculture, to accept and maintain "for the cause of truth for its sake, for the good of mankind for their sake, and for the glory of God for the good of all," and he most gladly accepted and promised to support them for that end, I could not but feel proud of the land whose public buildings were built and maintained for that end, and wonder if this was one reason that this Dominion of which we are so proud, is so bright a spot in our mighty empire. My mind went back to the scene of that notable picture of the African enquiring of our late noble Queen what was the secret of England's greatness. You all know the reply. I will acknowledge to you all this morning, ladies, that I went out from this hall on that afternoon a new woman so far as a British subject is concerned.

We also learned of perseverance from Mrs. John Hoodless, when she related the history of our Women's Institutes from the inception, and told of the many discouragements and hindrances overcome. In many instances where she expected support and sympathy, she was looked upon as Institute crazy or as a woman with a hobby. Many ladies would ask her what she expected to get out of it,—a name, notoriety, money, or position. But though she expected to get none of these things she persevered, and showed herself to be one of those rare characters who surmount all difficulties. The Macdonald Institute is the result. If I remember correctly the closing remarks of Mrs. Hoodless brought forth more applause than any other address given at the convention.

I will now declare the convention open to proceed with the business as printed on our programmes.

ADDRESS OF WELCOME.

By G. C. Creelman, President Ontario Agricultural College, Guelph.

Nothing could give me more pleasure than to welcome to the Ontario Agricultural College the delegates so largely represented here from the Women's Institutes of the Province of Ontario. I say this this morning with a very full heart, because I see before me the faces of women who are interested in women's work, in the advancement of women's work, and particularly in the special education for women which is provided in the Macdonald Institute. We have come to believe that the educational advantages that were considered essential for our sons are also essential for our daughters. And so perhaps for selfish reasons I am glad to see so many women here, because I hope to see this institution filled in days to come with your bright boys and girls. I shall look to you to take charge of the field work and ensure a large attendance.

For many years it was felt by the most advanced thinkers among the women of this country, Mrs. Hoodless and others, that the time had come when the government of this country should do something towards providing accommodation for the women and girls that they might be trained for their work or calling. Mrs. Hoodless, Sir William Macdonald, Dr. James Mills and Dr. James Robertson kept working away, until now we have located on the grounds of this college an institution which gives the girls an inspiration for their work and does not take them away from the farm or the home life on the farm. And you are here to-day to participate in the success of this movement.

Let us tell you that after all this was accomplished, and we had these fine buildings almost completed, Dr. Mills said to me, "We have got to this point all right, and we have splendid buildings, but do you think we are going to have anybody to put in them? Will any classes come to the Macdonald Institute to engage the attention of the teachers, or is it only talk throughout the country?" I said, "Well, Doctor, we will have to wait and see, but I believe that the agitation in the farm homes of this country is one that means something; it is one that is going to bring about permanent results; it is not talk and nonsense. The Women's Institutes are just beginning to wake up the women of this Province, and I believe when the doors are open we will have the building full." What was the result? The day that the Macdonald Hall was opened for the reception of students we had more than we could accommodate. We have 110 rooms and they were all filled. You would think that with so many ladies' colleges striving to maintain their position we would have had to advertise very widely to get enough students to even make a beginning! But not so. The growth has been steady. The statistics show that during 1905 we had in regular attendance at Macdonald Institute in domestic science work alone 296 girls. Does not that justify the expenditure of nearly $200,000 that Sir William Macdonald gave for these two buildings, and also the expense of maintenance by the Ontario Government for all time to come? So that I feel that the attendance at least at Macdonald Institute is a settled fact for some years at least.

Now I wish to say to any of you here who are thinking of taking a course at the Macdonald Institute in the near future, or who have daughters, or sisters, or neighbors who are thinking of coming to this institution, that you must apply early. We have now to go to the other extreme. We are turning people away now. We shall soon have to demand in the name of the

Women's Institutes of Ontario larger buildings to accommodate your daughters and sisters.

As you go from room to room you will see in detail the work of the Macdonald Institute. We shall be glad to have any of you ask questions of teachers or pupils as to the working of the school. I may be biased to some extent on account of having the supervision of the work, but the girls are not at all biased and they will tell you the truth! The girls will tell you where the deficiencies are; they will tell you actual facts. They will tell you about the personnel of the teachers if you question them closely. You who come here and see the working of the institution must be our advertisers; you can say, 'I have read, and seen, and heard of the work they are doing and it is—or is not—being done to my satisfaction.' We are expecting you to assist us by your kindly criticisms in the matter of perfecting this course. Much has been done in two years. In an institution of this kind, which is necessarily of slow growth, we have made rapid progress. The teachers are thinking and planning and educating themselves along lines which will be helpful to the girls who are working with them. We are endeavoring to do three things well. We want every girl who goes through Macdonald Institute to be able to cook; to do good laundry work; and to do good, plain sewing. These three things, so essential in the everyday life of a woman, we must insist upon for every girl who goes through this institution. There are, however, many things which boys and girls get at college which are most important. The things I gained at the Ontario Agricultural College many years ago were things that were not on the curriculum. The mixing up of girls from different homes; the mixing with girls and having to give and take more than they do at home is a most important part of their education. We have had girls here who were "only" daughters, I would not say they were spoiled—no mother or father ever admits that he or she spoils a daughter—but they come to us with different ideas of life to the girl who had been one of a large family and who had been accustomed to a great deal of give and take. After a time at college the girl who has had everything her own way at home has received by contact with the college girls, a very necessary part of her education. We had one girl who had been to Paris and who had brought with her many beautiful clothes. She had not been here very long before she shipped home all these trunks to her mother and said, "There is no place for them at this practical institution, where we are learning to *do* things that are going to be helpful to us all our lives; no place for social rivalry and display." The average girl from the ordinary farm home has just as good an opportunity here no matter what her means may be as those who have more advantages in the way of wealth.

There are really four points in the work that you would be interested in.

(1) The short course, which has been patronized more particularly by farmers' daughters heretofore. I would like to sound a note of warning here. If a girl can do so it is much better to take the long course. If a girl selects the short course she is then out of running for the year's course; on account of the difference in the work which has been covered by the short course, she is not in a position to drop into either the one or two year courses.

(2) The course for home-makers. This is a one year course; for one who does not wish to teach but who wishes to prepare herself to keep house for herself or some other person. This course is very useful to a girl, and she can generally make it of great advantage in helping to save steps for her mother, and help her along right lines of improving her home. This course covers nine months.

(3) The Housekeepers' Course. This is for professional housekeepers; for those who believe this to be their calling, or for those who through change in circumstances in the home and so forth, wish to prepare themselves to take positions in our public institutions or elsewhere. There are many philanthropic and charitable institutions making applications to us for trained housekeepers.

(4) The Teachers' Course. This is a normal course extending over two years, and is open to those who wish to prepare themselves to teach domestic science in our public and high schools. I want to ask your sympathy and support to help in this movement to have domestic science, or household science, or home economics, or whatever you wish to call it, taught in every school in the Province of Ontario. Now this is no fad. A gentleman stood on this platform last year at the time of our short course in stock judging and gave our girls a talk on cutting up pork, beef and mutton in the home. He said that on Saturday evening just before he left home he was standing in a butcher shop, and saw a young man and his wife come in with a one year old child. They had come to purchase meat for their Sunday dinner. The wife said, "My dear, what shall we have for dinner to-morrow?" "Whatever you like," replied the husband. "Oh, I don't care; anything will do me." As they talked the butcher stepped up and asked what he might serve them, but they said, "We have not yet decided what we'll have." Finally they took a porterhouse steak at 22 cents per pound. Now let me tell you that sort of thing happens every day and every night. Why cannot people make up their minds what they want before they leave home? If men did their business that way we would never get along. We should make up our minds regarding all these matters and plan ahead. If a druggist neglected to put in a supply of drugs until he had a demand for them what would become of the folks with toothache and other ailments? There is too much of this hap-hazard way of doing housework which is not by any means the easiest way of doing it. The best way to overcome this is to start in the public school. Why the little girl with her doll and her mother instincts should not be started right along this line of simple planning and stitching and other things until she needs them; why a girl cannot be taught how to do laundry work for half an hour or so each week. I cannot see! Every girl is going to have something to do with these things sometime, somewhere in her life. I have seen the work carried on in our own consolidated school. The little girls are taught to dress their dolls and make their clothes from the same patterns as their mothers' clothes. The time to teach these things to our girls is during the years when their time is worth practically nothing. Let us help the girls in their earliest years to get the instruction which will mean the most to them in after life.

REPLY TO ADDRESS OF WELCOME.

By Dr. Annie A. Backus, Aylmer.

When we meet upon occasions of this kind it is quite as necessary for us to study our dangers and weaknesses as to seek out our progress and success.

One danger which threatens our individual, our domestic, and national happiness is selfishness. Commerce is the ruling passion to-day, and you know our fashions are set by those who rule; they are first adopted in the cities, then in the towns, then in the villages, and finally the country people take them up. And now it is the fashion to be utterly and completely given

up to self,—selfish amusements, selfish employments; employments and amusements that are a menace to our national and domestic welfare, giving a false perspective to life and life's meaning.

We read in our daily papers of the social events—afternoon teas, bridge parties, at homes, progressive euchre; we read of the beautiful gowns and wondrous table decorations,—and the result is unrest and a feeling in the hearts and minds of our country women and girls that they are losing something out of their lives worth having.

And then the men in the country, they read of fortunes made by some lucky speculation, they see pictures of well-dressed men in luxurious chairs talking fortunes out of a private telephone, and the farmer feels that he is wasting his talents, and the young men long for city life. Someway we cannot understand that this is mere "bluff;" we cannot believe that all these social functions are filled with jealousy and emulation, heartaches and weariness of the flesh. We cannot think that these men, sitting in their easy chairs and making such piles of money are really care-worn and anxious. And so we look at the mountain from afar and wonder at its "azure hue." But every woman who wins great social success, sacrifices more than she can ever replace. And every sudden fortune acquired, acquired except by honest toil, means that some one has been wronged, and the man who acquires it has no real joy in its possession.

Now, what we must realize is that the selfishness of the social and commercial world is destroying every chance of happiness for those who follow them; and we must also realize that in our country homes our boys and girls must be taught that the life that counts, the life worth living, is not t be estimated by social success or so-called "lucky" speculation.

Thus we come to the question of education,—and remember always that education is an entirely different thing from learning, and bears to learning the same relation that wisdom does to knowledge. Webster says: "Education is properly to draw forth, and implies not so much the communication of knowledge as the discipline of the intellect, the establishment of the principles, and the regulation of the heart." To think aright, to have established principles, with no compromise between right and wrong, a properly regulated heart, with no maudlin sentiment, but brave and true in right doing—this should be the basis of all education. And when this is the basis of education for our boys and girls, the social and national evils which have so alarmed moralists will slink away like wolves before the rising sun.

Thomas Henry Huxley writes:—"That man, I think, has a liberal education whose body has been so trained in youth that it is the ready servant of his will, and does with ease and pleasure all that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength and in smooth running order, ready like a steam engine to be turned to any kind of work, and to spin gossamers as well as forge the anchors of the mind; whose mind is stored with the knowledge of the great fundamental truths of nature and the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions have been trained to come to heel by a vigorous will, the servant of a tender conscience; one who has learned to love all beauty, whether of nature or art, to hate all vileness, and to esteem others as himself."

So you see it is not learned men and women we need, but educated; not dreamers, but workers. The life that counts is the life that does things. Some one has said that Ontario has a splendid educational system, and so we take it for granted that such is the case. But is it? Are the things taught

in the schools those that go toward making great men and women? Practical men and women? Men and women ready to take up the duties of life with skill and thought? Do we find that the bright and shining lights of our schools and colleges become the bright and shining lights of the world? Do we find that the ability to memorize facts makes the hand skilful or the reasoning power accurate? Do we find our boys and girls coming home from school more ready and dexterous in the everyday duties of home? Would our school system not be improved by the introduction of more manual training, more physical development?

Now these are things about which we must think as well as about our fat stock. It is quite as essential that we raise well-bred children as well-bred horses. And you all know the care we give these beautiful creatures. The stable must be just right for the growing colt; it must have a level floor, lest the legs go under too far; it must be well lighted, for fear the eyes go wrong; the manger and feed boxes must be low, to develop the arch of the neck; the little fellow must not have too much clover hay, for that might spoil his wind; he must not be shouted at or punished, for that would spoil his disposition; if he acquired careless habits of standing with one foot over the other, that must be corrected by some mechanical contrivance. And all this is quite right, quite commendable. But when we go into the school house, do we find the same care and precautions to keep our children's bodies right? As a rule we find the ventilation bad, the chairs too high, and the desks too low; we find the children becoming narrow-chested and stoop-shouldered from this cause,—and we do not find a mother's name upon our school boards. But it is the mothers who, if they were given the right, would insist upon proper sanitary arrangements for the physical welfare of their children.

However, I am not here for the purpose of making a speech, but to thank Mr. Creelman and the people of Guelph for their gracious welcome to us, the delegates of the Ontario Women's Institutes, and to try to express our pleasure and gratification for this meeting in the hall of this beautiful building.

Who says the days of chivalry are past? The knight who founded the Macdonald Institute has overthrown more enemies for women than all the plumed knights that ever rode to battle, and we are proud of the just and generous men of Canada who have made it possible for us to meet here to-day. Our dearest wish is to prove ourselves worthy of their trust and confidence. And may we, as delegates, behave so circumspectly, that when we take our leave Mr. Creelman and the people of Guelph may say as did the little girl when opening the door for the mother's departing guest. When he apologized for troubling her, she said, "Oh, I am only sorry I am not letting you in."

ADDRESS.

By Superintendent G. A. Putnam, Toronto.

I cannot adequately express the gratification it gives me to meet so many representative delegates from the Women's Institutes scattered over this fair Province, delegates who are truly representative of this powerful organization for good among the rural population. I hardly expected to see so many here to-day, and it speaks volumes for the future of the work when we consider that you are not from any one section of the Province, but nearly all districts are represented, and that by women who have, in many cases, made a personal sacrifice in coming to this convention, thus

showing that you are deeply interested in the betterment of home conditions throughout your respective districts. What is of greater importance than that the home life of this Province should receive the closest study and consideration on the part of those who are responsible for the character of the same. Are the farmers of the Province studying the best methods in their occupation and keeping cattle, hogs and other stock that will give the greatest percentage of profit, just to keep the wolf away from the door and to accumulate money to be left to their descendents, or are they putting forth these efforts in order that the home life may be fuller and conducive to the more complete happiness of its members? Is it not true that the cattle we keep, the grain we sow, the fruit we produce, are tributary to the more essential interest of the farmer—the home. The horses and cattle and crops do not constitute 'home' except in so far as they contribute towards the pleasure we get from a closer contact with nature and increasing the income of the household. Do we ever stop to consider the majesty of the growing grain, the flower, the budding trees, or the young animals coming to life about the farm? We sometimes become so engrossed with the numberless tasks binding us to be up and doing that we forget everything but the monetary consideration, and our occupations become nothing more to us than the daily grind of the average corporation laborer. There is much in farm and village life which is pleasing, entertaining and ennobling, and the surroundings are conducive to the realization of that which is highest and best in the child and the man. Let us do what we can to see that all may have an opportunity to participate in the good work which our organization has the opportunity of carrying on.

President Creelman has just referred to the "students" of the Macdonald Institute, and last night he referred to the "ex-students" of the Ontario Agricultural College. I have pleasure in addressing you, not as ex-students but as students and teachers. You are meeting to study those conditions which will mean the improvement of our homes, and each member has the privilege of being a teacher and the opportunities of a student. We, as Canadians, have received with much gratification within the past two or three years the commendation of the Mother Land and other countries for the successes we have attained. Not only in our own country, but in all lands where they have gone, do Canadians hold prominent places in the social, industrial, educational, and political life of the state. They are specially prized in the United States; if you let it be known that you are a Canadian you will have a double welcome in most parts of the Union. It is claimed and claimed upon good ground, that one of the reasons why Canadians have achieved such marked success is that the home life of our country has been pure and tended to the building up of a strong and vigorous manhood,—morally, mentally and physically.

The members of the Women's Institute as well as others who are interested in the welfare of the nation, have a responsibility resting upon them in this matter. It is stated that our much prized home life is gradually slipping away from us. I trust that the members of our organization will see to it that the work undertaken in the various Institutes will be towards the strengthening of home ties and the enlistment of all the members of the household in that mutual consideration and thoughtfulness which cannot but result in the furtherance of that which is noble and true. It remains with you ladies to say whether this home life is to depart from our Canadian National life. It will not, if you say it must remain.

What is the meaning of a convention like this, so representative in its character? It means that we are giving the people of this Province an

opportunity for the home-makers to come together upon a common ground and discuss subjects of mutual benefit and interest. That is a privilege which has not hitherto been enjoyed to the full by the housekeepers and home-makers of the country. There are farmers' wives and some towns people who have no opportunity for meeting with their neighbors or the persons living on the next concession for intercourse of either a social or business nature. It is also true that many women, and especially farmers' wives, are a little independent and are apt to say "I will not be the first to make advances." We have in the Women's Institute an organization which permits of all women of the community meeting with a common object in view, no class, church or national distinctions being drawn. I have heard no plausible argument put forth why this organization should not meet with continued success. Its aims are most liberal, its objects helpful, and the subjects for discussion unlimited; and when it appeals to the intelligent persons of the community, as it has in the past, and conducts works of interest and benefit to all, even those who have not had the advantages of a good early education, there can be no doubt of the success of the work, if only those who are appointed to office have the time to devote to the work.

You would be very much surprised if you were in my office to look over the reports received from day to day of meetings held in different sections of the Province. One of the most gratifying things in connection with this work is that the officers and members search out subjects and prepare programmes for themselves, selecting those topics which they believe to be best suited to their particular localities. It is a very hopeful sign when we see the officers and members becoming less and less dependent upon the Department for direction and assistance. I have observed that the Institutes which arrange and carry out their own programmes without outside assistance are the ones which are doing the best work. Do not understand me, however, as advising that you should be entirely independent. It is well to invite your neighboring Institutes to assist you at your meetings, but only upon the understanding that their efforts will be reciprocated.

One of the presiding officers at this convention stated that it was not the main object of this Institute to teach members *how* to do this or that but to teach them *what* to do. It brings to the attention of the fathers and mothers the fact that as heads of the household, they have responsibilities to their families; and when you find a parent or guardian awake to this responsibility you may rest assured that they will have no difficulty in finding ways and means for putting into practical effect their convictions as to this responsibility. Some of us are so busy, so taken up with the daily routine, and in "making more money to buy more land, to grow more corn, to feed more hogs, to get more money" and so on in an endless chain, that we forget we owe a duty to our children beyond merely providing for their sustenance; that the children should receive character training and opportunities for culture. Of course so many fathers and mothers are so busy that they sometimes forget to teach and advise the children as to morals and culture. There is a duty resting upon the parents in this respect, and if they cannot devote the necessary time to the task, they should provide the facilities that the children may receive the necessary training. Do not forget President Creelman's advice in this matter.

I shall not detain you long for the reason that this convention was called chiefly that the delegates might discuss subjects which are of vital interest to them, to decide upon some line of work which shall be for the betterment of the organization. You will please bear with me, however, while I give you a few figures as to the

Growth of the Work.

You are all familiar with the growth of the work from a small beginning in the 90's to a membership of 3,081 and an attendance of 16,410 for the year ending with June, 1902. At the present time we have a membership of close to 9,000, with an attendance during the year of over 54,000. Seventy District Institutes have been formed and about 250 branches are carrying on aggressive work.

It is most gratifying to get encouraging reports from the officers who have been in the work for some years as well as those who have been connected with it for only a short time. They are generally enthusiasts and are doing all they can to advance the work. It is to the officers largely that we owe the splendid growth of the work. Then the official organ has helped materially in carrying on the work successfully during the past year.

The special character of the work undertaken by Women's Institutes is one of the reasons for the progress the work has made. When we send a delegate to a Farmers' Institute meeting he usually talks on some special line,—dairying, cultivation of the soil, the bacon hog, management of horses, etc.; and you can readily understand that only a limited proportion of an audience of farmers will be particularly interested in the subject under discussion. The farmer who raises beef cattle is not usually interested in the bacon hog, and the dairyman does not usually take much interest in the discussion of subjects relating to horses. But when you come to a Women's Institute meeting you will find that nearly all women will be interested in the discussion of any subject pertaining to home life and work. That is one of the chief reasons for the general interest taken in the work.

Do not allow a small attendance or a low membership to discourage you in the beginning of the work. Many officers who are now at the head of thriving institutes have stated to me that during the first one or two years they had almost vowed they would not try to continue the meetings, but by persevering they found later that their neighbors had come to appreciate their efforts.

I wish to express my sincere gratification at meeting such a large numbre of representative ladies from the length and breadth or the Province. You really seem like one of the family because I have corresponded with most of you throughout the year. I wish you to consider this your convention, and when the proper time comes express your views and present your difficulties, and the result will be a helpful and profitable conference.

THE WOMANLY SPHERE OF WOMAN.

By Miss Laura Rose, Guelph.

Everybody is willing to admit that woman's rights are practically won. Except that she is excused from a few formal political duties, she can have anything else she wishes.

The problem we propose discussing is, What does woman really want? What is her proper and congenial sphere?

For years past the press, the pulpit, and the platform have been discussing the equality of man and woman,—their equality of education, their equality for all social and business positions, their equality of remuneration

for service rendered of equal merit. This agitation has resulted in that now woman takes her place beside man in almost without exception, every walk in life. Whether these changes of opinion in regard to the enlargement of the sphere of woman and the results they have brought about are all that could be desired, form a question about which there might be much grave discussion. The tendency has been to narrow down the distinctions between man and woman, but the true womanly ideal is to keep them wide, as the Creator of all meant that they should be.

I fear that some of the views which I may express may to this audience of energetic, progressive women, seem like retrogression instead of progression, but I have thought much and observed more along these lines, and believe that the thinking women of to-day will agree with me, and I am still surer of the support of the men.

When God instituted the first household He installed Adam as the bread-winner—the producer; and Eve as the home-maker—the dispenser. Relationships between man and woman have not changed, but conditions and environments have made the woman in a broad sense equal to man and have brought about complicated social problems. The mere fact that five million women in the United States earn their own living, and that one-half the women over fifteen years of age are unmarried, make us pause to think, Why is it thus? Why? Largely because woman has ceased to be the director of the production of man, and has taken the reins into her own hands and become less reliant on the labor of man.

It used to be that the daughters remained at home to care for the younger brothers and sisters (now there are no younger brothers and sisters) and assist the mother with the sewing, mending, baking, washing and ironing, and they were happy and content in their simple, quiet, busy life, and at an early age married and in their turn became the centres of equally happy, thrifty households. In a few of our rural districts these conditions still exist, but how much oftener we find the daughters leaving the farm home to seek some position in a city; or if their home be in a town, going each morning to the office or factory. As a consequence, to lessen the housework, the clothing is bought ready-made, the bakeshop furnishes the larder and the public laundry cares for the clothes. The girls, if they do not have to assist in defraying the household expenses, spend their money mainly on dressing themselves very much more extravagantly than their fathers could afford to do, and indulging themselves in luxuries. The young men friends of these girls receive little if any more salary, and to keep pace with them have little chance to lay by money to establish a home such as these same girls expect and almost demand. And so the years in which a young girl dreams dreams and a young man's fancy lightly turns to thoughts of love, are frittered away in what is called "having a good time," until we find that the daily grind of the treadmill has left its lines on the once fair face of the girls, and the young man has settled down a confirmed old bachelor in some comfortable quarters.

Earning one's living engenders a spirit of independence in a woman, which does not tend toward matrimony, yet "maids must be wives and mothers to fulfil the entire and holiest end of woman's being." True there are many women placed in circumstances which make it necessary to do for themselves and often help to support others. These same women are the very salt of the earth, and their very maidenhood may have its hidden story of great sacrifice.

There are many womanly avocations or spheres which woman may enter and lose none of those gentler traits which are her chief charm, such,

for instance, as teaching, nursing, the practice of medicine, administering to the destitute in mind and body, stenography, retailing in small commodities, working for wages in the home and shop, and other kindred callings.

Productive industry on a large scale is rather to be shunned. Competitive conditions are so keen and the world forces so strong that the finer nerves of woman cannot stand the strain. It is well to leave this sphere exclusively to man, who can better contend with dishonest contractors, striking workmen, incompetent agents, corrupt politicians, and fickle customers. For the strenuous business life, and the mental and emotional attitude it requires, woman is fortunately unfitted. The quick decisions, tremendous ventures, overwhelming failures, and unexpected successes incident to a large business career, can only be met and borne by the stronger fabric found in man's mental and physical constitution.

If a rare exception shows a woman has entered this field and has been a financial success, a more thorough investigation may reveal that the success has made her a nervous wreck or has petrified all that was gentle and lovely in her nature,—conditions more to be regretted and vastly more pathetic than financial failure.

Let us safeguard well the differences in our natures, which make men seem our superiors, and yet which, if neutralized, would rob us of our greatest good. We do not add anything to the beauty of two mounts by filling in the valley between, but only by so doing make of them a monstrous plateau. Our first and last thought should be "Let us be womanly."

I strongly believe in a good elementary education for all girls, and the higher education for the girls who have a good physical constitution and whose parents can afford the expense of sending them away to school. In acquiring knowledge girls have shown themselves to be quite equal to boys, and the test examinations very often show that a girl's name heads the list. Usually a girl does not need so much spurring on to study as a boy; in plainer language, she is not so lazy and should rather be checked than urged. Often her ambition to come out head puts her under such a mental and physical strain, that when the day comes that she receives her certificate or diploma, it finds her completely shattered. She has won her laurels dearly, she has attained honors,, but has gotten in exchange for her robust figure, muscular flabbiness, and for her merry face, sharp-featured irritability. Thousands of our brightest and best young women are sinning against themselves and future generations by over-study. We must safeguard our health and look upon it as our most valuable asset.

By choosing a purely literary career we have, to a large extent, to exclude ourselves from the lighter and more joyous phases of life, and often grow what men term "peculiar." I would say let the men grope among the deeper sciences, and let the women remain content with reading about the wonderful discoveries. It is most comforting to come to the conclusion that it is not necessary to know everything in order to live.

I am treading on dangerous ground, but I am going to be fearless, I am going to say that our girls have been in their education taken too much from the home and its interests. The young girls go from the public school to the collegiate, and the list of studies is so long and hard that every spare minute she is under the parent roof she is pouring over books or practicing at the piano. From the school she takes some position and the training all through has been toward weaning her away from the home life and house work. She frankly admits she does not know anything about it. We hear the cry, "What can we do to keep our boys on the farm or turn them again

to the land?" But the silent cry that is ringing through our country is, "What can we do to keep our girls in the *kitchen*?" My greatest hope in the good work the Macdonald Institute may do is that it may turn the young women back to home life, and that their true pleasure will be found in administering to the comfort of the inmates of their own homes, as Milton says—"for nothing lovelier can be found in women than to study household good."

It is these "home" girls which prove particularly attractive to young men. These girls usually have less spending money; they are more economical, and have a sensible view of life, and their daily round of duties constantly directs their minds towards founding a similar home.

Some woman in writing said she did not see why so many women took up with such inefficient men, and the only reason must be that there were not enough efficient ones to go around. "Just anything" in the way of a man will not answer in this age, and if men only knew it, that is why they do not get married and why in consequence we have so many women single. If we wish to make home life the ideal sphere of woman, we must endeavor to persuade the young men to make more of their opportunities so as to become fit and congenial companions for these educated, cultured girls. It is not the man who earns the largest salary, but the man who shows himself considerate, obliging, thoughtful and devoted, as well as intelligent, who wins a true woman's heart.

It must not be inferred that every woman who assumes the responsibility of looking after a man and a home is doing her full duty toward the world and has dropped into her proper sphere. Many a woman only becomes a millstone around her husband's neck, and by her extravagance drags him to the brink of bankruptcy or suicide, or by her jealous and dissatisfied disposition, or the constant reiteration of the petty trials and cares of the day, drives her husband from the shelter of his own home to seek more congenial surroundings in the club room or public house. It may not be a difficult matter to win a man's affections, but to keep the fire of love brightly glowing on the hearthstone of his heart, requires the faith of an Abraham, the patience of a Job, the demonstrativeness of a Peter, the love of a Mary, and the cooking qualifications of a Martha.

Very often a married woman neglects her home, her husband, and her children, by taking too active an interest in public work or social functions, and falls far short of the ideal she is holding up to others. On the other hand a woman becomes too narrow if the four walls of her home compass her only world, her sympathies must be enlarged, her judgments softened, her charity stimulated by coming in contact with the grave problems which confront her less fortunate sisters. Still it appears to me that the most active members of all our philanthropic, missionary and benevolent societies, should be the maiden ladies whose home ties are such that there is no thought of neglect of duty if they are frequently seen on the street when the bell rings six o'clock, or are out night after night attending meetings.

It seems to me that a mother is making an unnecessary sacrifice for the betterment of the world or her own personal pleasure when she leaves the proper—but more likely improper—feeding of her family to hired help, and deprives herself of hearing the evening prayer lisped and getting the big hug and warm good-night kiss of the little ones in the cot.

Pure, simple, loving home life is the only firm foundation upon which a nation can build a lasting structure. It is the women who are largely responsible for the standing of the home. A woman, if she is being a lov-

ing and true wife, and a devoted, intelligent, righteous mother, need have no regrets that academic honors, high social position, or political privileges have been denied her. She is filling the womanly sphere. The eyes of the world and of the God above rest with favor upon her, and her reward in the hereafter is sure.

PATENT MEDICINES.

By Dr. Helen MacMurchy, Toronto.

What do people take medicine for?

An old lady, the widow of an officer in the British army, died in 1904 at St. Leonards', England. The "London Daily Mail" states that an inquest was considered necessary. The evidence brought out at the inquest elicited the fact that she "disliked doctors," but was in the habit of taking every night.—

Nine compound rhubarb pills.
Several mixtures.
Four tablespoonfuls of senna.
Three teaspoonfuls of cascara.
A quantity of magnesia.

There are a good many people like the old lady. Most of them are probably not really sick, but they are uncomfortable. Why are they uncomfortable? When our beautiful and beloved Queen Alexandra, then Princess of Wales, was out walking one day near Sandringham she met a young British subject, roaring and crying, accompanied by a stolid British nursemaid. The gracious lady stopped and enquired the cause of the child's woe. "Ma'am" said the maid, not knowing to whom she was speaking, "there aint no stomach can't stand nine buns." That is the reason that some people are uncomfortable. They eat too much. Or they eat too fast. It is somewhat the same thing. People who will slowly and thoroughly masticate their food, satisfy their needs far better than those who take a potato in two mouthfuls. Sooner or later those who bolt their food and eat too much will have indigestion and will be uncomfortable, and they deserve it. Or perhaps they do not take enough fresh air or enough exercise, and want some medicine that will enable them to go on doing these things and yet be comfortable.

The celebrated Dr. Abernethy had once a very rich patient, who drove in his own carriage behind two horses and two men, his coachman and footman. He ate too much and took too little exercise. So the great and gruff Dr. Abernethy gave him a prescription. The prescription was that he was to get out of his carriage and run behind it. And he did it. Dr. Abernethy was one of the great doctors. You had to do what he told you. But that is not a favorite prescription. That is not the medicine that people want. You have a headache and it is your own fault. But it is a great deal easier to swallow pills than to mend your ways and take exercise, or eat slowly, or go to bed earlier, or worry less.

Now this is a wrong and foolish use of medicine,—to do something you should not do, and then dose yourself to make up—but it is a very common one. It is not only a wrong and foolish use of medicine, it is dangerous. Self-dosing is dangerous, especially with Patent Medicines.

G—— IS INSANE, HIS FRIENDS SAY

The L—— Man Who Killed His Wife in Detroit has been off His Head.

L——, Ont, July 15, 1905.—D—— G——, who killed his wife in Detroit yesterday was a son of Mr. M—— G—— of ——— street, and his wife, whose maiden name was J—— D——, also lived here, both belonging to highly respectable families. G—— did well in business, but, being attacked with rheumatism, he took a variety of patent medicines, which, the doctors say, worked on his brain, and he was sent to a sanitarium. Here he improved so much that three weeks ago he was allowed to come here and attend the funeral of his father-in-law, T—— S——. Then G—— rejoined his wife and they went back to Detroit. While here G—— showed evidences of insanity, but his case was not considered serious.—*The Toronto News.*

H—— NEWS.

Death of Miss J—— B—— After Taking Headache Powder.

(Special Despatch to The Globe.)

H——, June 26, 1905.—Miss J—— B——, second daughter of Mr. W—— B——, died suddenly yesterday afternoon from the effects of a headache powder. The unfortunate young lady, who was about 22 years of age, was found by her mother unconscious in bed ten minutes after having taken the powder, and medical assistance was at once sent for. Miss B—— lived only about half an hour, and did not regain consciousness. The young lady had been out in the morning with her mother.

Here is one more example from Great Britain. On May 17th, 1905, Mr. Sheppard, of Stoke-Newington, England, obtained a free sample bottle of Liquozone. He took some himself for the relief of hæmorrhoids from which he suffered, and gave some to his wife to cure her of neuralgia, without any success in either case, and Mrs. Sheppard then proceeded to dose her two little girls, Constance Adelaide, aged four years, and Dorothy May, aged two years. She thought they needed it, although they were well. They did not remain well long. Constance was taken ill on May 21st with severe diarrhœa and vomiting

and died on May 23rd. Dorothy was attacked with the same symptoms on May 22nd and died on May 25th. Of course, there was an inquest. Here is the verdict of the coroner's jury :

"Both the children died from exhaustion after vomiting and diarrhœa, set up by taking Liquozone."

And here is the evidence of Sir Thomas Stevenson, the celebrated English chemist, one of the witnesses at the inquest :

Analysis of Liquozone :

Sulphur dioxide	0.269 per cent.
Sulphuric Acid	0.848 per cent.

Practically a solution in water of sulphur dioxide.—*The Lancet, June 10th and July 1st, 1905.*

That is, Liquozone is 99 per cent. water.

The danger to life and health of taking patent medicines is beginning to be recognized. In the *Insurance Advocate* for January, 1902, it is stated that one insurance company requires its medical examiners to ask candidates for life insurance, "What patent medicines have you used in the last five years?" And some druggists are refusing to sell patent medicines.

A Canadian druggist writing to *American Medicine* says: When anyone comes in and asks for a bottle of these swindles, I always give them what they ask for, but usually with my opinion of the fraud thrown in. In certain cases it is useless to do this, as it has no effect. I am thankful to say, however, that I have been instrumental in stopping the sale of hundreds of bottles of these frauds."

A WINDOW EXHIBIT IN A CHICAGO DRUG STORE.

THE ECONOMICAL DRUG COMPANY OF CHICAGO.

PLEASE DO NOT ASK US

What is | ANY OLD PATENT MEDICINE | Worth?

For you embarrass us, as our honest answer must be that

IT IS WORTHLESS

If you mean to ask at what price we sell it, that is an entirely different proposition. When sick consult a good physician. It is the only proper course. And you will find it cheaper in the end than self-medication with worthless "patent" nostrums.

—*Collier's.*

Dr. Nasmith, who is investigating the subject for the Provincial Board of Health, says that at Niagara Falls there is sold, especially to the negroes, a good deal of Dr. Agnew's Catarrh Cure. This contains cocaine—a most dangerous drug,—valuable in its place, but never to be taken without a doctor's prescription. A cocaine fiend is far worse than a drunkard—far worse than a morphine fiend, even. He cannot sleep, cannot eat, cannot work, cannot think, cannot do anything that a man or woman ought to do.

What Do Patent Medicines Contain?

These facts lead up to the questions (1) What do Patent Medicines contain? (2) When you buy Patent Medicines do you get the worth of your money?

I. Patent medicines contain

1. Alcohol.
2. Bread, sugar, soap, salt, water.
3. Drugs found in every drug store and known and used by every physician, none of which are safe for general use, except by medical advice, and some of which are very dangerous.

Those patent medicines advertised for the relief of pain generally contains opium, morphine, cocaine, etc. Headache powders and headache tablets usually contain heart-depressants, such as anti-febrin or antipyrin. Tonics, bitters, etc., nearly all contain alcohol. A reference to the following tables will show the contents of a good many patent medicines.

APPROXIMATE INGREDIENTS OF VARIOUS PATENT AND PROPRIETARY PREPARATIONS.

From a lecture on Patent Medicines, delivered at the London Hospital Medical College on November 10th, 1903, by Robert Hutchison, M.D., Edinburgh, F.R.C.P., London.—*The Lancet, Nov. 28, 1903*,

Aperient and Liver Pills.

Beecham's Pills: Aloes, ginger and soap.

Baillie's Pills: Aloes, colocynth, oil of cloves and soap.

Bile Beans: Cascara, rhubarb, licorice and oil of pepperment, coated with gelatin.

Cockle's Pills and Barclay's Pills: Aloes, colocynth and rhubarb.

Carter's Little Liver Pills: Podophyllin (one-eighth grain) and aloes soc. (one-third grain) in each pill.

Dixon's Pills: Taraxacum, podophyllin, jalap and soap.

Holloway's Pills: Aloes, rhubarb, saffron, Glauber's salts and pepper.

Page-Woodcock's Wind Pills: Aloes, oleum carui and soap.

Scott's Pills: Aloin and cascara, with a soap basis.

Whelpton's Pills: Rhubarb, aloes, ginger, pulv. ipecac and soap.

Saline Aperients.

Eno's Fruit Salt: Bicarb. soda, tartaric acid and citric acid.

Lamplough's Pyretic Saline: Citric acid with bicarbonate of potassium and sodium

Abbey's Salt: Tartaric Acid with bicarbonate of sodium, sulphate of magnesium and sugar.

Cough Mixtures and Lozenges.

Congreve's Elixir: Benzoic acid, infusion of elderberries, alcohol and allspice.

Keating's Cough Lozenges: Ipecac, lactucaria, squill, licorice, tragacanth and sugar.

Owbridge's Lung Tonic: Balsam of tolu, oil of aniseed and oil of cloves.

Balsam of Aniseed: Contains aniseed and other ingredients with one-tenth grain of morphine in every ounce.

Preparation for Gout and Rheumatism

Eade's Pills: Salicylate of sodium, guaiacum and aloes.
Gloria Tonic: Colchicum, guaiacum resin and iodide of sodium
Blair's Gout Pills: The active ingredient is colchicum.

Preparations for Headache and Neuralgia.

Antikamnia: Bicarb. of sodium, antifebrin and (?) caffeine.
Bromidia: Bromide of potassium, chloral, hyoscyamus, cannabis indica, oil of aniseed, syrup and water.
Bunter's Nervine: Creosote, chloroform, camphor, balsam of tolu and alcohol.
Kaputine: Antifebrin and sugar (colored).
Kay's Tic Pills: Sulphate of iron, quinine and soap.

Preparations for Asthma.

Crevoisier's: Belladonna, foxglove, stramonium, sage and nitrate of potassium in equal parts.
Hair's Cure: Iodide of potassium and tarwater.
Plant's Cigarettes: Leaves of stramonium, lobelia and green tea.
Tucker's Cure: Atropine, cocaine, hyponitrous acid, and various balsamic extracts, administered by means of an aeriser.

Remedies for Obesity.

Trilene Tablets: Sugar and a vegetable constituent of unknown nature.
Grey's Specific: Contains 47.2 per cent. of free sulphur and a bitter (? gentian).
Mrs. Frost's Anti-Obesity Remedy: The active ingredient is extract of fucus vesiculosus.
Russell's Anti-Corpulent Cure: Citric Acid (20 grains to half an ounce) glycerin and water. The Pink Tablet-Saccharine.

Miscellaneous Preparations.

Buer's Piles Cure: Ointment—gall and hamamelis with lanolin basis. Powder: Precipitated sulphur and carbonate of magnesium.
Californian Syrup of Figs: Senna (active constituent), syrup of figs and cinnamon.
Doane's (Backache) Pills: (1) White coated aperient (dinner pills) podophyllin, aloin, rhubarb and peppermint. (2) Brown-coated (Backache Pills)—Oil of juniper and resinous constituent (? benzoin).
Guy's Tonic: Phosphoric acid, tinct. cochineal. infusion of gentian and chloroform water.
Dalby's Carminative: Pulv. rhei, magnes. carb., glycerin, sugar, ol. menth pip, and ol. anethi, and a small quantity of laudanum.
Chlorodyne: Chloroform, ether, hydrocyanic acid, morphine, cannabis indica, capsicum, peppermint and treacle.
Clarke's Blood Mixture: The active constituent is iodide of potassium. (about six grains to an ounce).
Oxien: Powdered sugar and starch and ol. gaultheriae.
Ozerine: Bromide of potassium and iodide of ammonia, with chloroform water.
Phosferine: Quinine, phosphates and hypophosphites.

Siegel's Syrup: Aloes, capsicum, licorice and treacle.

Woodward's Gripe Water: Liquor magnes. carb., ol. anethi, sugar, and a trace of alcohol.

Pink Pills: Sulphate of iron, an alkaline carbonate and licorice, thickly coated with sugar and colored with carmine.

Steedman's Teething Powders: Calomel and starch.

Warner's Safe Cure: Nitrate of potassium (about ten grains to the ounce) and various diuretic herbs.

Mrs. Terry's Drink Cure: Sugar (98 per cent.) and salt (2. per cent.)

Antidipso: Chlorate of potash and sugar.

Patent Medicines and Drug Foods.

Geo. G. Nasmith, M.A., Ph.D., Chemist to Provincial Board of Health.

	Alcohol by volume.	Approximate constituents.
Peruna	24.90	Vegetable extractives.
Ontario Chemist's Tonic Bitters	15.58	Vegetable bitters.
Stringer's Nervine	7.95	Sarsaparilla, oil of wintergreen, sulphates.
Dr. Shoop's Restorative	10.2	Bitters, sugar, strychnine (3-100 grains to dose.)
Castoria	3.5	
Ayer's Sarsaparilla	23.30	Sarsaparilla, potass. iodide.
Burdock Blood Bitters	16.00	Bitter, sugar, lime phosphates.
Warner's Safe Cure	11.40	Potassium nitrate, herbs.
Hood's Sarsaparilla		Sarsaparilla, potass iodide.
Lydia Pinkham's Vegetable Compound	21.00	Sugar, bitter herbs.
Paine's Celery Compound	19.00	Bitter herbs, sugar, potash salts, phosphates (small quantity.)
Pierce's Golden Medical Discovery		Wild cherry extract, iron and phosphates, arsenic.
Powley's Liquozone		Sulphurous acid, sulphuric acid, iron .08%, phosphoric acid.
Chase's Catarrh Cure		Starch, menthol, carbonates, borates.
Agnew's Catarrh Cure (formula on bottle confirmed.)		Cocaine hydrochloride, benzoates, Sod. bicarb. boric acid, menthol.

The following miscellaneous specimens have been examined for alcohol. Of these, Vin Mariana and Vino don Lorenzo, very largely used as tonic wines, are evidently of high quality. Florida Water, whose use as an alcoholic stimulant is by no means rare, is a dangerous one. A case has been recently reported of the death of six Indians from the effects of a drunken debauch in which Florida Water was the only stimulant used.

	Alcohol by volume.
Vin Mariani	17.35%
Vino don Lorenzo	16.85%
Kola Tonic Wine	2.10%
Florida Water	96.00%
Bay Rum	52.70%
Dr. Agnew's cure for the Heart	16.10%

—*From the Reports of the Provincial Board of Health for Ontario.*

Consumption Cures.

A beginning has been made at the analysis of consumption cures, so-called.

Psychine contains: Alcohol, Glycerine, oil of cloves, or closely allied oil and a bitter almost certainly Calumba.

Hoofland's Consumption Cure: Glucose and Tar water or oil of White Pine.

—*From the Reports of the Provincial Board of Health for Ontario*

COMMONWEALTH OF MASSACHUSETTS.

State Board of Health.

Reports upon Food and Drug Inspection for the year ending September 30, 1902.

[From the Thirty-fourth Annual Report of the State Board of Health of Massachusetts for 1902.]

Proprietary Medicines.

In the twenty-eighth annual report of the Board, for 1896, a condensed compilation was made of the results of certain examinations of proprietary medicines made in prior years by the analysts of the Board and scattered through various reports.

Frequent requests are continually made for copies of this report, and in view of the fact that it is now out of print and further copies are unavailable, it has been thought best to reprint most of the data contained therein relating to lead in cosmetics, alcohol in tonics and bitters, etc., calling attention to the fact that most of the reprinted analyses were made prior to 1897, and represent the condition of the various preparations at the time they were collected. In most cases the preparations were examined for the presence of a single ingredient only, to which it was thought best to call especial attention on account of its questionable effect upon health.

Cosmetics.

The following were found to contain acetate of lead (sugar of lead) or some active lead compound :—

	Per Cent. of lead contained.
Ayer's Hair Vigor contained the equivalent of about	0.30
"Renown" Hair Restorer contained the equivalent of about	1.86
Mrs. Allen's Hair Restorer contained the equivalent of about	2.30
American Hair Restorative contained the equivalent of about	0.61
Barrett's Vegetable Hair Restorative contained the equivalent of about	0.22
Chevalier's Life for the Hair contained	Much
Hall's Vegetable Sicilian Hair Renewer contained the equivalent of about	1.75
Wood's Hair Restorative contained the equivalent of about	1.59
Ring's Vegetable Ambrosia contained the equivalent of about	1.51
Parker's Hair Balsam contained the equivalent of about	2.32
Wolf's Vegetable Hair Restorer contained the equivalent of about	0.95
Champlin's Liquid Pearl	Much

Instances of lead poisoning have been known to occur from the free external use of such preparations as the foregoing.

Quinine Pills.—Several brand of these have been examined during the year, nearly all of which were found to contain approximately the required amount of quinine sulphate. One brand of pills manufactured by Arthur J.

Connor, of Boston, purporting to contain 2 grains each of quinine sulphate, was found to contain 1.4 grains per pill of total alkaloids. The pills also contained a notable quantity of powdered tale or soapstone (magnesium silicate).

Cigarettes.—The "Star Brand of Medicated Cinnamon Cigarettes," purporting to contain no tobacco, were found to contain a large proportion of the latter in mixture with various aromatic herbs and cassia.

Summary of Drug Statistics

	Genuine.	Adulterated.	Total.	Per Cent. of Adulteration.
Acidum tannicum	4	10	14	71.4
Æther	5	1	6	16.6
Alcohol	6	6	12	50.0
Aqua ammoniæ fortior	1	3	4	75.0
Aqua destillata	.....	7	7	100.0
Capsicum	69	10	79	12.6
Cera alba	3	6	9	66.6
Cera flava	32	40	72	55.5
Chloroformum	1	2	3	66.6
Extractum glycyrrhizæ	1	1	2	50.0
Ferri et quininæ citras	6	.....	6	.0
Glycerinum	124	19	143	13.3
Liquor calcis	7	6	13	46.1
Maranta	31	.....	31	.0
Miscellaneous	29	24	53	45.3
Oleum caryophylli	2	2	4	50.0
Oleum limonis	7	17	24	70.8
Oleum olivæ	71	32	103	31.0
Opii pulvis	2	1	3	33.3
Potassii bitartras	3	.....	3	.0
Pulvis glycyrrhizæ compositus	21	1	22	4.5
Quininæ sulphas	24	1	25	4.0
Sodii boras	8	4	12	33.3
Sodii phosphas	124	17	141	12.0
Sodii phosphas effervescens	5	.....	5	.0
Spiritus ætheris nitrosi	4	36	40	90.0
Spiritus frumenti	1	7	8	87.5
Sulphur lotum	11	29	40	72.5
Sulphur præcipitatum	.....	11	11	100.0
Syrupus	6	3	9	33.3
Tinctura iodi	18	183	201	91.0
Tinctura opii	2	8	10	80.0
Zingiber	8	1	9	11.1
Total	636	488	1,124	43.4

The following contained corrosive sublimate, or some other poisonous salt of mercury, in the proportion of 1 to 15 grains per ounce:—

Harriet Hubbard Ayer's Recamier Cream, Balm and Lotion.
Madam Ruppert's World Renowned Face Bleach.
Madam Yale's Excelsior Complexion Bleach.
Hill's Freckle Lotion.
Souie's Freckle and Moth Eradicator.
Perry's Freckle Lotion.
Oriental Cream.
Mrs. McCorrison's Famous Diamond Face Lotion (14.7 grains to the ounce).
Royal Cream.

In one instance a six-ounce bottle contained 47 grains of corrosive sublimate; another contained 14 grains of the bichloride per ounce. It is not surprising that instances of serious harm were reported from the use of such articles.

Tonics and Bitters.

The following were examined for the purpose of ascertaining the percentage of alcohol in each. Some of them have been recommended as temperance drinks:—

	Per cent. of Alcohol (by Volume).
"Best" Tonic	7.6
Carter's Physical Extract	22.0
Hooker's Wigwam Tonic	20.7
Hop Tonic	7.0
Hoofland's German Tonic	29.3
Howe's Arabian Tonic, "not a rum drink"	13.2
Jackson's Golden Seal Tonic	19.6
Liebig Company's Cocoa Beef Tonic	23.2
Mensman's Peptonized Beef Tonic	16.5
Parker's Tonic, "purely vegetable," recommended for inebriates	41.6
Schenck's Sea Weed Tonic, "entirely harmless"	19.5
Atwood's Quinine Tonic Bitters	29.2
L. T. Atwood's Jaundice Bitters	22.3
Moses Atwood's Jaundice Bitters	17.1
Baxter's Mandrake Bitters	16.5
Boker's Stomach Bitters	42.6
Brown's Iron Bitters	19.7
Burdock Blood Bitters	25.2
Carter's Scotch Bitters	17.6
Colton's Bitters	27.1
Copp's White Mountain Bitters, "not an alcoholic beverage"	6.0
Drake's Plantation Bitters	33.2
Flint's Quaker Bitters	21.4
Goodhue's Bitters	16.1
Greene's Nervura	17.2
Hartshorn's Bitters	22.2
Hoofland's German Bitters, "entirely vegetable and free from alcoholic stimulant"	25.6
Hop Bitters	12.0
Hostetter's Stomach Bitters	44.3
Kaufman's Sulphur Bitters, "contains no alcohol" (as a matter of fact it contains 20.5 per cent. of alcohol and no sulphur)	20.5
Kingsley's Iron Tonic	14.9
Langley's Bitters	18.1
Liverpool's Mexican Tonic Bitters	22.4
Paine's Celery Compound	21.0
Pierce's Indian Restorative Bitters	6.1
Puritana	22.0
Z. Porter's Stomach Bitters	27.9
Pulmonine	16.0
Rush's Bitters	35.0
Richardson's Concentrated Sherry Wine Bitters	47.5
Secor's Cinchona Bitters	13.1
Shonyo's Germah Bitters	21.5
Job Sweet's Strengthening Bitters	29.0
Thurston's Old Continental Bitters	11.4
Warner's Vinegar Bitters, "contains no spirit"	6.1
Warner's Safe Tonic Bitters	35.7
Warren's Bilious Bitters	21.5
Wheeler's Tonic Sherry Wine Bitters, 19	18.8
Wheat Bitters	13.6
Faith Whitcomb's Nerve Bitters	20.3
Dr. Williams' Vegetable Jaundice Bitters	18.5
Whiskol, "a non-intoxicating stimulant, whiskey without its sting"	28.2
Colden's Liquid Beef Tonic, "recommended for treatment of alcohol habit"	26.5
Ayer's Sarsaparilla	26.2
Thayer's Compound Extract of Sarsaparilla	21.5

Tonics and Bitters.—*Continued.*

	Per cent. of Alcohol (by volume)
Hood's Sarsaparilla	18.8
Allen's Sarsaparilla	13.5
Dana's Sarsaparilla	13.3
Brown's Sarsaparilla	13.3
Corbett's Shaker Sarsaparilla	8.8
Radway's Resolvent	7.9

The dose recommended upon the labels of the foregoing preparations varied from a teaspoonful to a wineglassful, and the frequency also varied from one to four times a day, "increased as needed."

Supplementary to the above list as quoted from the 1896 report are given the following results, obtained more recently:—

	Per Cent. of Alcohol (by Volume)
Hoff's Extract of Malt and Iron	5.24
Peruna	28.59
Vinol, Wine of Cod Liver Oil	18.88
Lydia Pinkham's Vegetable Compound	20.61
Dr. Kilmer's Swamp Root	7.32
Dr. Peter's Kuriko	14.00

For purposes of comparison the following table, taken from "Materia Medica and Therapeutics," by J. Mitchell Bruce, is added, showing the percentage of alcohol (by weight) in various alcoholic beverages. It will be seen that there is more alcohol in many patent medicines than in wines and liquors, and it is further said that the alcohol used in the manufacture of patent medicines is of an inferior quality.

	Alcohol by Weight.
Whiskey, Rum, Gin, Liqueurs	51 to 59%
Port, Sherry, Madeira	16 to 22%
Champagne	10 to 13%
Hock, Burgundy, Claret	8 to 12%
Cider	5 to 9%
Ale, Porter, Malt	3 to 5%
Kommiss	1 to 3%

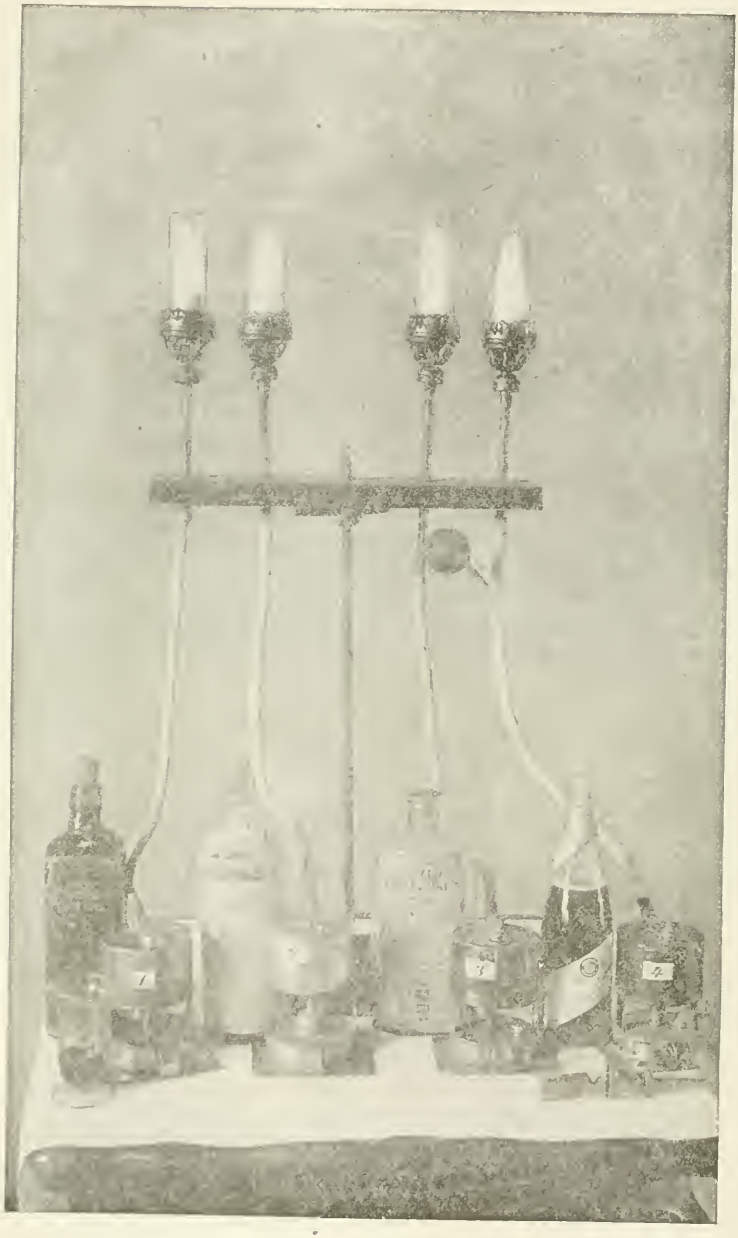
Here is a proof of the presence of alcohol in patent medicines

How Patent Medicines will Burn.

—*From The Ladies' Home Journal.*

Dr. A. J. Read, of the Battle Creek Sanitarium, recently made for the periodical, "The Life Boat," of Hinsdale, Illinois, an interesting experiment for the purpose of testing the alcohol in patent medicines. He reports that he put in one can 4 drachms (1 tablespoonful) of "Hostetter's Stomach Bitters"; in a second can the same amount (1 tablespoonful) of "Peruna"; and in a third can a similar amount of "Lydia Pinkham's Vegetable Compound," and in a fourth

can a tablespoonful of "Beer." The cans were connected by rubber tubes to a gas burner and mantel, heat was applied and the vapor gave bright illumination as follows :—



Can No. 1 :	Hostetter's Bitters	burned for	4	minutes.		
" 2 :	Peruna	"	2	"	40	seconds.
" 3 :	Lydia Pinkham's Vegetable Compound	"	2	" and	35	"
" 4 :	Beer	"			20	"

One More Proof.

Perunitis (Peruna-itis) or Hartmanitis?

George E. Malsbury, M.D.
Cincinnati, Ohio.
Assistant to the Chair of Practice, Medical College of Ohio; Medical Department, University of Cincinnati.

In September, 1904, I was called to see a woman just past the meridian of life, whom I found suffering from multiple neuritis. The nerves of the lower extremities, the upper extremities, and some of the nerves of the head were successively involved. There was no history nor evidence of exposure to cold, rheumatism, nor exhaustion to act as etiologic factors.

Finally, after ruling out other causes of the disease, it became evident that the patient must have been taking alcohol in some form, notwithstanding the fact that she was a refined lady and an earnest advocate of temperance, who would not knowingly indulge in any form of alcoholic beverage. I asked her what she had been drinking. She was shocked. She disclaimed being a tippler either in public or private. I asked her what medicine she had been taking. She stated that she had not been under the care of a physician.

Further examination into the history of the case revealed the fact that the patient had been using "Peruna" for a long time, taking the nostrum under all sorts of pretexts.

After explaining the case to the patient, she readily consented to stop the "Peruna" cocktails. As stated, first one nerve then another was attacked. Finally, after about three months' treatment with the usual remedies for multiple neuritis, the woman apparently recovered.

The case is interesting from a nosologic standpoint. When practicable, it is customary in medicine to seek an etiologic classification of diseases. Since the only apparent cause of the disease in this case was "Peruna" would it be proper to call it peruna-itis or perunitis? Or should we honor the discoverer or concocter of the nostrum and name it Hartmanitis?

—*American Medicine*, Dec. 9, 1904.

II. Do You Get the Worth of Your Money?

Now we come to the question, "When you buy Patent Medicines do you get your money's worth?" Liquozone for instance—50 cents and one dollar per bottle. You know what is in it from the evidence of Sir Thomas Stevenson at the Coroner's inquest in England. About 1 per cent. sulphuric and sulphurous acid and 99 per cent. water. It would probably cost one cent. per gallon. (*American Medicine*). Large profits these.

Patent medicines cost the people of the United States eighty million dollars per year, or to put it in another way—

What Patent Medicines Cost People.

The enormous extent of the patent medicine business and the amount of money spent by people in the purchase of nostrums of one kind and another, will appear from the following extract from *Frank Leslie's Magazine* for March:

"Take all the cocoa and chocolate manufactured in this country in a year. Add all the blacking and bluing, the flavoring and extracts, and the axle grease. Take next a year's product of that beet sugar industry, which was important enough to hold up a great treaty for two years in the Congress of the United States. Throw on all the glue, the refined lard, the castor oil, the perfumes and cosmetics, and the kindling wood. Finally put on top of the pile the entire output of ink and mucilage. The total value of this accumulation will still be less than that of a year's product of what we call "patent medicines." The census of 1900 placed the value of "patent medicines" produced in this country annually at fifty-nine million six hundred and eleven thousand three hundred and thirty-five dollars. As the average profit is about one-third, this means that the sum paid over the retail druggists' counters, taking no account of increased consumption in the last four years, is something like eighty millions of dollars a year, about a dollar for every man, woman and child in the country."

I am sure you all have neighbors who almost ruin themselves both in pocket and health with patent medicine as Mrs. Zucker did.

"Patent Medicine Her Fad.—When Mrs. Louis Zucker, who is 45 and lives in Hoboken, appeared recently in court against her husband, whom she charged with assault and battery, the defendant, who is a tailor, set up a remarkable defense. He told the recorder that when he married the complainant, she represented that she had $800, and it was understood he was to have whatever was left of this sum after the wedding expenses had been paid. This had not been done. His wife, he declared, read all the patent medicine advertisements and whenever she came across a new one she would say that it was just what her system required, and would buy a bottle, There were now, Zucker alleged, some 300 bottles of patent medicines at his home."

—*American Medicine*, May 27, 1095

The Red Clause.

But I can almost hear someone in the audience say, "How is it that I never heard anything of all this before if what you say is true?" If I were in turn to ask you how you know about other things that are going on, you would reply. "I read the newspapers." Yes. And do you not know why you have never heard all this before? Did you never think how many hundreds and thousands of dollars are spent in newspaper advertising by all the patent medicine proprietors? And do you think they would pay newspapers to advertise them in one column and expose them in another column? Did you never hear of the famous "Red Clause" printed in red ink across the face of the patent medicine newspaper advertising contracts in the United States, as follows:—

"It is hereby agreed that should your State or the United States Government pass any law that would interfere with or restrict the sale of proprietary medicines, this contract shall become void."

And do you know that this clause is used as a threat to compel newspapers to oppose any legislation directed against the patent medicine evil, on pain of losing all this advertising money? It would be interesting to know whether there is a "Red Clause" in Canada.

The Newspaper Minus Patent Medicine Advertisements.

Here is something which shows how our newspapers are filled with patent medicine advertisements. It is a thing of shreds and tatters, is it not? You can hardly recognize it. It is all that is left of the editorial page and the page opposite

the editorial page of the ————, Saturday, March 11th, 1905, when the Patent Medicine advertisements are cut out. A few fragments of editorials, a scrap here and there of the hearings in the High Court of Justice and the Divisional Court, half of Eaton's advertisement, 3 railway advertisements, 3 steamship advertisements, 5 other small advertisements, one or two despatches—and nothing more! All the rest Patent Medicine advertising! Then look for a moment at this great array. These are the Patent Medicine advertisements cut out of that same issue of the ————, and pasted together on yards of muslin. What a combination of "scare-headlines," grotesque "cuts", traps to catch the unwary and statements which cannot be true. What do you think of them? Don't you think there are a good many of them? Canada is a healthy country! Why do Canadians need all this medicine?

Is This True?

Let us look more particularly at a few patent medicine advertisements. What do you think of this?

(1) "The Cartilage Method." "You can increase your height from 2 to 5 inches by this method."

Or this

(2) "Bile Beans for Biliousness." "Great discovery of an ancient Australian medicine."

This was proved in a lawsuit to be only ordinary drugs from an ordinary drug manufacturer, having no connection whatever with Australia. *British Medical Journal, Sept. 30, 1905.*

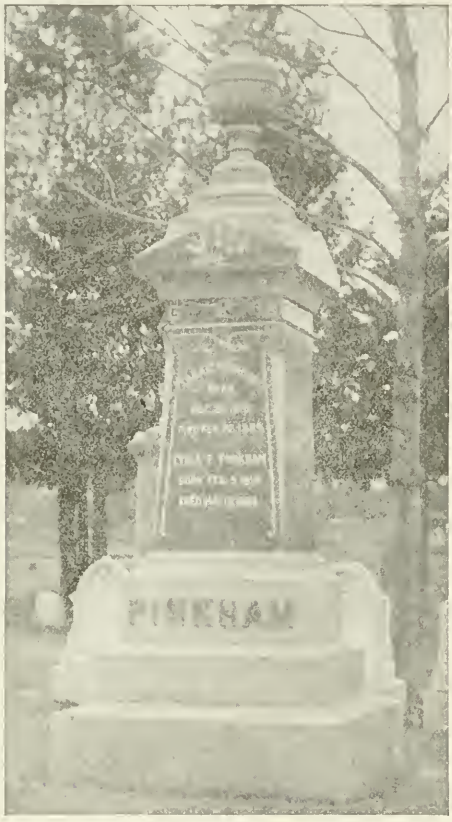
(3) "Kauffman's Sulphur Bitters." Printed on label "No alcohol." But the State Chemist of Utah found inside the bottle no sulphur and 23 per cent. of alcohol in a pint bottle,—price $1.00.

(4) "Half the world is sick because of weak hearts. Ninety-nine out of a hundred have weak hearts. Dr. Agnew's Heart Cure will relieve heart disease in thirty minutes, will with certainty effect a lasting cure."

(5) We are all familiar with the maternal smile of Lydia E. Pinkham in the advertising columns of the newspapers, accompanied by such advertisements as these:

"Years ago Mrs. Pinkham, at Lynn, Mass., determined to step in and help her sex. Having had considerable experience in treating female ills with her Vegetable Compound, she encouraged the women of America to write her for advice in regard to their complaints, and being a woman it was easy for her ailing sisters to pour into her ears every detail of their suffering. . . . . No physician in the world has had such training, or has such an amount of information at hand to assist in the treatment of all kinds of female ills. This, therefore, is the reason why Mrs. Pinkham in her laboratory at Lynn, Mass., is able to do more for the ailing women of America than the family physician. Any woman, therefore, is responsible for her own suffering, who will not take the trouble to write to Mrs. Pinkham for advice." June 27, 1905.

Write to Mrs. Pinkham! But Mrs. Pinkham is in her grave! After life's fitful fever she sleeps well, and nothing, not even a Patent Medicine advertisement, can wake her from that sleep. Here is her monument in Pine Grove Cemetery, Lynn, Mass.



—*From The Ladies' Home Journal.*

TESTIMONIALS.

Finally, and this is the question we have all asked ourselves, "What about the testimonials? How do they get them?"

Sometimes people really think patent medicines cure them and say so. These people are very much like the poor woman who had just been admitted to the wards of Bellevue Hospital, New York. The nurse, a friend of mine, put the clinical thermometer in the patient's mouth, and took her temperature. And just as soon as this was done the patient said, "O nurse, I feel so much better. That medicine did me good!"

HERE ARE SOME MORE MODERN METHODS.

(1) "Remarkable testimony has been obtained by the post-office department as to the ways in which testimonials are obtained by some of the big concerns engaged in this business. One large firm admitted that it had agents out

seeking persons who had formerly occupied prominent positions in the community, but had suffered financial reverses and were harassed by debts they were unable to settle. The agents would obtain possession of the unpaid accounts, and would then apply pressure to the unfortunate victims, demanding immediate payment in full. Finally, after long persecution the desperate victim would be invited or commanded to call at the office of an attorney, where he would be given to understand, that, if he would sign and swear to a testimonial a receipt in full for the claims against him would be given. This seems incredible, but the facts are now on file in the records of the post-office."

New York Medical Journal, August 24, 1904.

(2) "To what length daily journalism will go at the instance of the business office was shown in the great advertising campaign of Paine's Celery Compound, some years ago. The nostrum's agent called at the office of a prominent Chicago newspaper and spread before its advertising manager a full-page advertisement, with blank spaces in the centre.

'We want some good, strong testimonials to fill out with,' he said,

'You can get all of those you want, can't you?' asked the newspaper manager.

'Can you?' returned the other. 'Show me four or five strong ones from local politicians and you get the ad.'

That day reporters were assigned to secure testimonials with photographs which subsequently appeared in the full page advertisement as promised. As for the men who permitted the use of their names for this purpose, several of them afterward admitted that they had never tasted the 'Compound,' but that they were willing to sign the testimonials for the joy of appearing in print as 'Prominent citizens.'" *Collier's*, Oct. 7, 1905.

(3)

LETTERS FOR RENT

300,000 Jas. Wm. Kidd, medical file cards, representing all kinds of diseases (will sort) 1904.
180,000 men's matrimonial, 35,000 women's '04, 1st.
200,000 agents and canvassers.
50,000 Dr. Pierce order blanks, '02, '03.
20,000 Ozomulson order blanks, '03.
30,280 Theo. Noel, '02, '03, medical file cards.
59,000 Agents' directory, '02, '04, '05.
250,000 Home work '03, '04, '05.
27,500 Rosebud trust, firsts, '03, '04.
19,500 Bond Jewelry payups, trust, '04, envelopes.
52,000 10c. song orders, Star Music Co., '04, '05.
17,500 Dr. May & Friar, ladies' regulator, '03, '04.
6,000 Nervous debility, '03, '04, Appliance Co.

Over 1,000,000 letters on hand, all kinds. Call or write me for samples and ads. Letters bought.

C. A. Davis, 1634 W. Ohio Street, Chicago.

An Advertisement Showing How the Names to Orders Sent to Patent Medicine Concerns are Offered for Sale or to Rent to be Used by Others. Yet we are Told How "Sacredly Confidential" These Letters are Regarded and Held!

(FROM THE MAIL ORDER JOURNAL OF APRIL, 1905.)

—*Ladies' Home Journal.*

(4)

SOLICITED FOR TESTIMONIALS.

Patent Medicine Faker Ordered to Leave Toronto.

BAMBOOZLED YOUNG GIRLS

Healthy Damsels Signed Statements That They Had Been Cured of Serious Diseases.

A new kind of faker has been working in Toronto of late, but will leave the city to-day, having been advised to do so by Inspector Stark. He is a patent medicine testimonial faker, and his method of obtaining testimonials is unique. His name is Squire White, and his home is in Fredonia, N.Y. Several weeks ago he registered at a local hotel and at once started operations. He would meet various girls on the streets and ask them if they wished to obtain a dozen first-class photographs of themselves, entirely free. If they answered in the affirmative he would take them to a local Yonge Street photographer, and the pictures would be taken. He would then tell the girls that he would give them one dollar each for all the others they brought to him. Then came the fake. In return for the photographs the girls signed a testimonial, stating that they had used a certain famous patent medicine, and found that it cured them of all their ills. They also signed a paper, agreeing to allow the proprietors of the medicine in question to publish the testimonial and also the photograph taken, when, how, and as often as they pleased, and in as many newspapers as required.

Detectives Cuddy and Black were acquainted with the facts of the case and apprehended White. He was taken to Inspector Stark's office and examined very closely. He admitted that he was employed to collect testimonials and photographs. He also stated that he had been doing the same work in St. Catharines, under the name of Williams. Several of the testimonials are now in the possession of the inspector, who gave White over night to leave town.—*Mail and Empire, May 19, 1904.*

A Peruna Testimonial.

(5) CONGRESSMAN WHITE FROM NORTH CAROLINA.

Congressman George Henry White of Tarboro, N.C., writes the following letter to Dr. Hartman regarding the merits of Peruna:

"House of Representatives, Washington,
February 4, 1899.

Peruna Medicine Co., Columbus, Ohio:

Gentlemen,—I am more than satisfied with Peruna, and find it to be an excellent remedy for the grip and catarrh. I have used it in my family, and they all join me in recommending it as an excellent remedy.

Very respectfully,
George H. White."

A Letter About the Testimonial.

"Dear Sir,—I am just in receipt of your letter of the 12th inst., enclosing what purports to be a letter from me when I was in Congress from the Second District of North Carolina, with my residence in Tarboro, N.C.

I was the Congressman, evidently, to whom the Peruna people referred. But the letter is an absolute falsehood and forgery. I never saw or heard of it before, nor did any member of my family ever use the nostrum for grip or catarrh as alleged. (Signed)

George H. White"

—*Ladies' Home Journal, 1905*

Patent Medicines and The Law.

Most civilized countries do not permit patent medicine frauds. Great efforts are now being made in the United States to obtain legislation to remedy the Patent Medicine evil. There is already a law passed in California compelling all sellers of proprietary medicines to label packages of such medicines with the name of any poison contained therein.

"By a recent ordinance of the United States Internal Revenue Department all druggists who sell proprietary medicines containing whiskey or other distilled spirit as their chief ingredient will have to pay the special liquor dealer's tax. The manufacturers of such medicines will have to pay the special tax imposed on rectifiers and liquor dealers. The ordinance will come into force on December 1st, 1905."

In Switzerland proprietary medicines must be approved of by a commission of medical men. Permission to sell proprietary medicines is refused if

(1) The medicine contains any noxious drug.

(2) The advertisement or labels, etc., contain falsehood or nonsense.

(3) The price is exorbitant.

In France the government acquires at a fair valuation the sole right to sell such patent medicines as are approved, and requires a statement of the merit of the discovery, of the advantages which have been obtained in curing human ills and of the personal advantages which the inventor has already derived from the remedy or may hope to derive from its adoption. An agreement is then drawn up between the minister and the inventor, ratified by a higher authority, and the secret published without delay.

In Germany the use of patent nostrums is greatly discouraged by the German government, and every notice or advertisement of this class of preparations must distinctly embrace an accurate analysis of the ingredients or component parts used in such preparations.

In Russia no proprietary medicines are allowed to be manufactured or sold this country going further than any other in absolutely prohibiting the manufacture and sale of nostrums of all sorts.

With the English-speaking races it is radically different. In the Dominion of Canada the utmost latitude is allowed in the sale of such things, for they are sold in grocery stores, the proprietors of which are sometimes underselling the regular wholesale trade.

The same state of affairs exists in British Honduras, grocery stores dealing in many of the ordinary drugs that are only sold by licensed apothecaries in this country.

In Brazil the law respecting the sale of chemicals, medicines, poisons and proprietary articles is very strict, and if enforced must be of great benefit to the public and a protection to the physician, pharmacist and the druggist.

In England the Pharmacy Act compels the manufacturer to state on the label that the preparation contains morphine or other poisonous drugs, if this is the case, and to label it poison. It is also required by the English law that a proprietary medicine must be a genuine original invention, and a complete description of it must be filed at the Patent Office.

What will Ontario do about this?

ADDRESS.

By Hon. Nelson Monteith, Minister of Agriculture for Ontario.

It is undoubtedly a privilege that heretofore I have not enjoyed in speaking to such a representative gathering of the ladies of our country. I feel that it is an honor to have such a privilege, especially when I consider the object of your organization, namely, the betterment of the home life and the upbuilding of character in this great Province of ours. You have my very hearty sympathy in your work. We have heard reports of the large gathering of ladies at the Macdonald Institute, and of the fact that your numbers are so greatly increased this year that you have had to move to a larger hall. While most of you have heard the aims of the work discussed on previous occasions I thought I might for a few moments speak more particularly to those who have never been here before.

This great institution known as the Ontario Agricultural College, whose fame has gone abroad through the nations, far beyond the bounds of Ontario, has had allied with it recently the Macdonald Institute. The purpose of the Macdonald Institute is to train the girls of this country in the art of housekeeping, and everything that enters into that great science. Although the work so far has been somewhat experimental it has gone along most satisfactorily. Most of the work is new to us. We are receiving at our doors from time to time contingents of young women who come with an honest desire to improve and to gain knowledge of the science of housekeeping. I trust this condition of things will continue. I may say that as time goes on very much the same rules that we have been compelled to adopt at the Ontario Agricultural College will necessarily have to be adopted at the Macdonald Institute, that is that as time goes on it will more and more

become the college of the farmers' daughters of this Province. We have no desire to keep out those who come from the city, but the design of the founder, Sir William Macdonald, was that ultimately it should do for the farmers' daughters what the Ontario Agricultural College is doing for the farmers' sons at this time. This is something we must keep in mind, and should the finances of this Province permit that the institution may be further extended I know of no expenditure that would give better results.

We may talk about our great output of agricultural productions, but to my mind the greatest product of our farms and our homes are the boys and girls who go to make up those homes; and for that reason we should not consider that material gain is the only object in life. Our ideals should rise above that. I often think of the ideals that young men and young women should have in aspiring to positions in such work as Farmers' and Women's Institutes. An increased and widened sphere of life and work means increased power to do good. That is our most legitimate excuse for desiring to better our position in life. This should be the desire of those who hold office. The work of the institutes in this country are doing much to get us "outside ourselves" as it were, and get us in touch with our neighbors, so that the world is not confined within the four walls of our home.

We have a proud position to-day and we desire to maintain it, and it must largely rest with those who have been entrusted with the control and guidance of our homes, and you are those upon whom great responsibility has been cast. I know that your ambitions are along proper lines and I hope they may ever continue so.

I did not come out here to weary you with any lengthy address, although the subject is worthy of extended remarks, but I came to wish you godspeed in your work and efforts and to assure you that you will have in the Department one who is not deaf to your requests for money to promote the great cause you have in hand. I can say this advisedly, for I know that you are doing work which cannot be called in question. I am glad to see you entering so heartily into the matter of improving the laws in regard to the sale of patent medicine. You will now be able to sympathize with a body of men who have so many opinions in direct contradiction to each other to deal with when making up the slate. I trust that you may receive every support and encouragement in your work, and I may say that so far as the Department is concerned the Farmers' and Women's Institutes will be well looked after.

ADDRESS.

By Dr. James W. Robertson, St. Anne de Bellevue, Que.

After listening to this excellent address by Dr. MacMurchy, I shall relate an incident which came to my notice lately. I was in a town where the local option law was in force. I had occasion to go into a drug store. A moment later, in came a child hardly tall enough to see over the counter. He made a peculiar sound—"Roo-Xha"—that neither the druggist nor I could understand. After several attempts to get at his meaning, the druggist made out that he wanted "Peruna". He then brought from the cellar a whole armful to be ready for future purchasers, and handed a bottle to this poor, ill-fed, ill-clad child. The druggist had evidently plenty of sale for patent medicines containing a large percentage of alcohol. There is a whole volume of degradation in this incident. It represents something that should be stopped in this country of ours.

I may say that I have frequently taken occasion, or I have made opportunity when that did not exist, to denounce the bad habit our people have acquired of reading patent medicine advertisements, and afterwards swallowing the things they read about. The newspapers have been very gracious to me in reporting what I have said about agriculture and education, and sometimes even about frivolous matters; but only once have I been reported when speaking my mind freely on the menace to the health, to the security of life, and even to the permanence of the civilization of the people, through the habit of swallowing patent medicines. I believe a campaign started and persistently carried on by women would do great good.

I am to say a little this morning on a subject which is dear to you and very close to my heart,—the movement for the improvement of rural schools in Canada.

The Women's Institutes are doing much which makes for the betterment of life in rural parts. After all, life in the country should be life at its best. Should it not? Life at its best in every sense! Persons who can afford to choose their place of abode, live in the country a large portion of every year by preference. It is the best place to bring up children in regard to their bodies and health; and it should be the best place in regard to their education. Many people now leave the country and go to town for the sake of educating their families. I hope that in future we shall have such schools in the country that people will go to the country for the sake of educating their families. I know of two places where such a condition of things exists.

The Macdonald Movement.

In your Women's Institute work you are doing much for the betterment of conditions in rural life: you are doing much to make clear to people how they can get the most out of life,—not by accumulating the most to leave behind, but by giving the best service to the community. The Macdonald Movement, as it has been called, is along the lines you are pursuing and I would like to enlist your sympathy. The Macdonald movement, as helped on by Sir William C. Macdonald, has nothing destructive in it. It does not desire to destroy anything good that now exists in rural districts, but it hopes to construct something better and thereby displace what is poorer. It aims at helping the rural population to understand better what education is and what it may do for them and their children. Many farmers say, "Education is worth nothing to me, it makes my boy idle and careless

towards farm tasks; he wants to go away from home; it makes him less useful to me as a farmer." And women have said the same thing to me about the education of their daughters. They say that education makes them clever or smart but not useful as daughters in their homes. The school should make the son or daughter helpful in the home as well as capable outside.

What Education May Mean.

Just a word as to what education may mean. Education is not something that can be bought and sold,—transferred like so many pounds of groceries. It is not something that is comprised in a diploma; it is not acquired only in a school or college. It is a series of experiences leading up to the possession of certain powers. It is a series of experiences leading first of all from helplessness of body into ability of body. Therefore education should include forms of bodily training, that the body may be a fit dwelling place for a sound, well-balanced mind. The baby begins life helpless; and every experience that leads out of that state into one of personal ability is educational. The baby begins life ignorant; and everything that tends to lift one out of a state of ignorance into one of intelligence is educational. Intelligence regarding the common things of life should receive attention first. And I am glad to say our school courses are taking more of that quality into them. The baby begins life utterly selfish. One is not finding fault with the child when stating those facts. We have the child, helpless, ignorant and selfish,—with the three marks of the uneducated. We hope for some measure of escape from these; and in so far as worthy progress is made, the child grows out of helplessness into ability; out of ignorance into intelligence; out of sefishness into thoughtfulness and consideration for others. These are three steps which should characterize every school's efforts and every school's success.

Education should train the child for his own sake to be a happy individual. The child is not happy when he is given always tasks which he does not like. He may thus learn to dislike the school. But the children who have a school garden, domestic science and manual training with their books, go to school happy. It is a great thing to get into the habit of being happy. It is a great thing to make the school a place for the formation of such habits. But the school should do more than to train the child to habits whereby he may keep himself happy. It should train him to be useful to the community. "No man liveth unto himself." The lines of teaching should not make him an unsocial individual, striving only for himself. The school should do much towards training the child to be useful to others.

Further, the child is to be regarded not only as an individual and a coming citizen but also as one in the eternal procession of the human race out of the depths of animalism and the degradations of ignorance and selfishness into the best that men and women can be. "Every man that hath this hope in him purifieth himself." No man can be fully what he would like to be at his best moments of aspiration; but he may help some boy to come nearer to that. If one watches his chance he may help others to do and be what he could not attain to himself.

The rural school should be brought into touch with rural life. The school should not be a place apart from the home. It should not be a place for books only; but also for training by means of tangible things and events close at hand. But that sort of training costs more; and it is worth much more to the individual and to the community.

A Good Investment.

If our rural schools are to be supplied with really capable teachers we must hereafter have higher-paid teachers. We can no longer get well trained teachers to teach in rural schools at the salaries they have been receiving. Salaries are to go up; and a teacher with adequate scholarships, training and experience must be paid a better salary. It would pay Ontario to give more attention to education in the rural districts. The progress of the Province in wealth and material prosperity depends largely on its agriculture; and in the future that must be affected greatly by the sort of education in the elementary rural schools. The little kingdom of Denmark sends to England some of the same sorts of products as Ontario. And Denmark received in 1903, $8,400,000 more than other competing countries received in the same markets for an equal quantity of the three products—butter, bacon and eggs. That was the premium obtained by the Danes for superiority of quality and condition. Denmark has had for thirty years the kind of schools I advocate. The rural population has been educated towards ability, intelligence in regard to rural life, and the unselfishness that makes for successful co-operation. That little kingdom receives from England an immensely larger amount for her farm products than any other country for equal quantities. That is one of the premiums received annually and chiefly as one of the results of the excellence and suitability of the education in rural schools in Denmark. Ontario with a population 11 per cent. less than Denmark is reported as paying some $3,300,000 annually for the maintenance of rural schools. To put it another way, the premium received by the Danes for superior quality and condition of butter, bacon and eggs exported, is two and a half times greater than the whole amount expended in Ontario for the maintenance of rural schools. There are material gains, and much besides from wise expenditures for schools.

Would you like to advocate increased taxation for Ontario at the risk of upholding an unpopular cause? When a man seeks public office too often he endeavours to get in by advocating lower taxation. What is taxation,—taxation under our institutions of government of the people, by the people, for the people. Everybody chipping in to do for each and for all what could not be done so well or could not be done at all by individual action alone. We cannot have better schools without better teachers; we cannot have better teachers in rural schools without better salaries; and we cannot have better salaries unless the people tax themselves. There is high public spirit in paying taxes for schools. "Bear ye one another's burdens, and so fulfil the law of Christ," and (may I add?) of Christain civilization. If we refuse to uphold taxation, to the extent of the community's needs and of our ability to pay, we are getting away from the first principles of Christianity. Taxes for schools must go up or we, as a people, must go down. We want our citizens to cherish intelligence, liberty, justice and goodwill; and these are to be inculcated in the school house. Therefore, become advocates—unpopular though it may be—of increased taxation for better schools. Money wisely spent on schools is well invested,—invested "where neither moth nor rust doth corrupt, and where thieves do not break through nor steal."

Some Advances Made.

I should not encroach on your time at this session to speak in great detail of the Macdonald Movement or the new Macdonald College being founded at St. Anne de Bellevue, Que. You have heard of the manual training centres provided by Sir William Macdonald. He furnished funds

to establish manual training classes in connection with the public schools in 21 places and to maintain them without cost to the public or pupils for a period of three years. The local school authorities then took over and extended the work. Over 20,000 girls and boys in Canadian schools now receive the benefits of manual training in their regular school course as one result of his benefaction.

Then there are the five groups of school gardens, with five rural schools in each group, with a competent travelling instructor, guiding the pupils and teachers in nature study and the elements of natural sciences. Besides these there are the four Macdonald Consolidated rural schools which are all giving a fine education—adapted to rural life. You have seen for yourselves the one adjacent to the Macdonald Institute. To those who have examined it, and the opportunities it affords the pupils, no words of mine are needed in its praise. You know of the Macdonald Institute in whose hall your convention was held last year. We are all, alike, proud of its staff of professors and teachers, and of the opportunities it offers to farmers' daughters and others in domestic science and to teachers of rural schools in nature study. Then, lastly, perhaps not lastly but more recently there is the Macdonald College at which we shall be delighted to welcome students from Eastern Ontario as well as Quebec and the Maritime Provinces.

The Macdonald College.

The site selected is a beautiful one overlooking the Ottawa River, at St. Anne de Bellevue, Que. The main lines of the Grand Trunk and the Canadian Pacific Railways pass through the property, and the stations of both railways are situated within its boundaries. What has been quite famous as the Robert Reford Ayrshire Stock Farm is part of the property acquired by Sir William. Five adjoining properties of smaller size were purchased to complete the block of land suitable for the purposes intended.

The institution which will be known as the Macdonald College will comprise several departments. In connection with the college of Agriculture proper, there will be three main departments,—the department of farms, the department of research, and the department of instruction.

Department of Farms.

The department of farms will consist, primarily, of the demonstration or illustration farms, each fully equipped and self contained. They will be managed for training the students, for profit and also for illustrating the best known systems of agriculture. There will be a dairy and live stock farm, with several breeds of dairy and of beefing cattle; and a small cultures farm, devoted to such products as vegetables, small fruits, large fruits, poultry, etc. Each farm will have a specialty, and it will also include stock and equipment for other branches of farming. Provision will be made on these farms for receiving a number of apprentices, who will learn the operations of farming as well as methods of management. An industrious lad will be able to earn as much on one of the farms as an apprentice as will pay for his board in the college residence building when taking a course of instruction during the winter. The same will apply to women, who may become apprentices on the small cultures farm, in connection with fruit growing, floriculture, dairying or poultry keeping. In the college department during the winter months such women could take courses in household science, including cooking, dressmaking and cutting, housekeeping and the like.

Department of Research.

The department of research will be equipped with a competent staff and commodious and suitable laboratories. One laboratory building will contain the departments of biology, bacteriology and entomology. Another will contain the departments of physics and agricultural chemistry. In this department, while the research work will be very helpful to the advanced instruction carried on in the College, original investigations will be undertaken and carried on for the benefit of agriculture in the Dominion at large.

The question of the relation of the bacterial contents of soil to its fertility is one which is very alluring, and pregnant with great possibilities of service and benefit to the farming population. In every field problems await solution, and it is expected that the staff in the research department at St. Anne's will do its full share towards advancing the knowledge upon some of them, to the profit and enlightenment of the farmer. After the department of research has advanced any discovery far enough to make it applicable to ordinary agriculture, its practicability in regard to profit making, etc., will be tested in the department of farms before any new method is commended to the farmers.

Department of Instruction.

In the department of instruction provision will be made for short courses for farmers and farmers' sons, in such subjects as live stock, improvements of seeds, improvement of soil, fruit culture, dairying, poultry keeping, farm machinery, etc. There will also be a women's department, and short courses will be offered to farmers' daughters in sewing, cooking, dressmaking and cutting, millinery, housekeeping and so on. There will also be short courses for women in dairying, poultry keeping, bee-keeping and fruit culture. The courses for men and women will be very much on the lines followed at the best colleges of agriculture.

In planning for and carrying out the assistance which Sir William C. Macdonald has been giving towards the improvement of rural schools in the five provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island, he has thought it expedient to provide a college suitable for the purpose of training men and women to be thoroughly qualified as teachers in elementary and advanced rural schools. Such teachers will be competent not only in ordinary subjects as accepted hitherto but will be qualified to use these newer means of education known as Nature Study work, Household Science and Manual Training. Those attending the teachers' department of the college will not be required to take any work in the department of agriculture, but they will have the opportunity of doing so, if they desire to familiarize themselves with any part or detail of it. A staff fully competent to carry on the work of the teachers' college will be provided.

In addition to the long course of training which may be required when the teachers' college comes to its proper work, short courses will be provided for teachers already in the service, who may desire to avail themselves of the opportunities and privileges which will be found for Canadian teachers at the Macdonald College.

Residence for Students.

In addition to the instruction buildings and laboratories, there will be a residence for men and another for women.

All these buildings will be of fire proof construction. Sir William Macdonald's direction in the matter is that the buildings are to be the best of their kind for the purpose for which they are intended, due regard being had to economy for original cost and maintenance. They will make a handsome group of buildings, standing on a fifty acre field sloping towards the river, with a fine southern and eastern exposure. It is expected that the buildings will have the roofs on before the winter of 1906-07, and, barring unforeseen accidents or causes for delay, the college will be ready to receive students in the autumn of 1907.

What is Worth While.

I am glad to have had this opportunity to tell you about increased taxation. In this movement, as in others, when people speak favorably about it, it spreads. We are all banded together. We must not say, "There are certain things I am going to have, because I am entitled to them," but rather, "I have certain obligations and duties to discharge and I must see that I do not fail in them."

I think of the time when one is old and says, "I am tired; I have had my fill; I have been at the feast; I have drunk deeply of every lawful cup; I am willing to sit back; I should be glad of quiet and to enter upon the long rest." When a man is full of years he may pass in review the days gone by. Perhaps he may estimate values and think what was worth while. I remember to this day the fragrance of that rose I got as a boy. I smell it still sometimes when I lie awake at night. And I remember the first time I ate sponge cake; how good it tasted! How pleasant were the awakenings, the full awakenings, of even the senses! I remember still some fine colors that shot into my consciousness and left me throbbing. I mind particularly one Sunday evening in summer when as a bare-footed lad I lay in a furrow of a pasture field, day-dreaming before the gloaming as the sun went down behind the clouds. The words my mother had been reading to me a few hours before were still in my ears. The colors of the glorious sunset pushed them on into my soul. "Lift up your heads, O ye gates; even lift them up, ye everlasting doors, and the king of Glory shall come in."

Do you remember the first anthem, the first great choir? Besides there are the dozens of intellectual awakenings which come gradually and gently to the full morn and noon and evening of life. These all help to make life worth while; and furnish part of the satisfying memories which one would like to have in the great review.

Do you suppose that one would dwell with fond memory on the fact that once he bought a certain piece of property for a few hundred dollars and that it advanced in value to thousands and made him rich? Would he have fine contentment in thinking how his business keenness outdid the other fellow; of how he downed him in fierce competition and came out ahead? Don't you think there would be serene gladness in recalling the times and ways in which he had helped others, the once or oftener he had helped boys or girls to get better schooling than would otherwise have been their privilege? The things that count are those whereby we have done our part in helping others to be useful and happy. What shall it profit a man if he gain the whole world and lose his own chance of helping the boys and girls?

ORGANIZATION OF BRANCHES.

By Miss L. McMillan, Hillsburg.

In organizing a branch institute, the first essential is to have the people thoroughly understand the work of the institutes, and the benefits to be derived from these organizations. In some communities it will be found that a very great prejudice exists towards the institute, which usually arises through a misunderstanding of what the work really is.

When contemplating the organization of branches in different parts of the riding, it would be well to send one of the district officers to all the points to talk up institute work and learn the feeling of the people regarding it. When all the women want an institute it is a very easy matter to form a branch, but, on the other hand, when some of the ladies favor it and some object, it is anything but easy.

Make suitable arrangements for the holding of meetings; secure the best institute speaker available; advertise the meetings well, by having attractive programmes printed, and send these out from one week to ten days previous to the meeting. If they are out longer there is generally a danger of something else turning up in the meantime, and then the institute meeting is forgotten.

One of the best ways to interest the ladies is for the speaker to give them an outline of institute work, and the benefit it would be; then give a talk suitable to them and their surroundings; or possibly a cooking demonstration on something within the reach of all, not using ingredients that cannot be procured in the country and were probably never heard of; finally talk on organizing a branch. If the ladies present do not feel like organizing a branch it is better not to try and force the matter, but leave with them a good impression of the work, and plan for a meeting in the same place in from three to six months.

When a branch is being organized the first thing to do is to explain the different offices, the work of each officer, and the kind of person suitable for the different offices. For the president, choose the best woman in the community; one who has a practical knowledge of housework, a genial disposition, and is popular with the people, not for her social abilities, but for her good qualities.

For vice-president, have the woman who will make a good support and assistant; and for the secretary (who is also "managing director"), the right person would be one of the younger members, who will take an active interest in the work, has some knowledge of book keeping, is prompt in answering correspondence, and has considerable business ability.

In our district we have found it well to appoint three directors for each branch, to assist with the general work and secure new members. Two auditors should also be appointed, whose duty it shall be to audit the books at the end of the year.

In appointing these officers it is advisable to vote by ballot, as this method brings out the feeling of the people much better than any other way.

In the location of branches, consider the country. If the farms are small and the population large, branches may carry on successful work within a few miles of each other, say from five to six miles. On the other hand, if the farms are large, guard against having the branches too close to each other, as the membership would not be sufficiently large to permit the branches to flourish.

Suitable places to organize would be in the villages, and at points where Farmers' Institutes hold their meetings.

In each district six or eight branches could be successfully managed by the district officers, but, unless the secretary is in a position to devote a great deal of time to the work, more than this number is hardly advisable, as some of them would be neglected, and to neglect a branch means slow but sure death to it. With a good president and secretary, and a little encouragement from the district officers, a branch will be almost sure to prosper and do good work in any locality, even though it is not receiving all the support it should.

THE BEST WAY TO INCREASE MEMBERSHIP.

By Mrs. (Dr.) Robertson, Milton.

Our superintendent has suggested that in talking up this phase of the work I might tell you of the methods adopted in Halton district. What I may say will be from the standpoint of a *district* officer.

No doubt Halton, with its very large membership, is looked upon by many as having some "royal road" to success, but I can assure you that is not the case. We have had no particular good fortune. We have made our own fortune in our own way, and we owe what measure of success we have attained to the good work of the officers and directors of the district and the local institutes, with the assistance always of our ever ready superintendents. Mr. Creelman in our earlier days, and now Mr. Putnam, have been exceedingly good to us, and we owe very much to the help thus obtained.

We began in a small way. Some of us, at the solicitation of Miss Maddock in 1901, consented to become officers, even before we had any members. We soon held a small meeting, and enrolled ten members. These members then elected permanent officers and the work began. The first year we had only thirty members, and felt very much discouraged, but made up our minds to keep at it.

During our second year we found great benefit from attending the meetings of the Farmers' Institute. We must give the officers of the Halton Farmers' Institute great praise for their help,—especially the secretary who was ever ready to assist us. We were always able to have the lady delegate to assist us at an afternoon meeting for ladies only, whilst we attended the evening meetings together. At these afternoon meetings we always obtained many new members, and usually were able to form a branch institute in any central locality.

We kept this work up until the summer meetings seemed to suit our work better. These we were particular to advertise well, and found them of great help.

Ours is a mixed community, there being many towns and villages scattered all over our county. We make it a point to start our branches in a town or village, doing our best to get the membership from the surrounding country, as well as from the local place. In this we succeeded, and to this fact we must attribute much of our success. We divided our county up as well as possible, so that the whole ground would be covered. The county officers visited the branches as often as possible, encouraging and strengthening them.

Then we owe much of our success to the aid of the speakers and demonstrators sent to us from the Department of Agriculture, especially when we had a series of meetings.

We hold monthly meetings, frequently in private homes, where we can have influence in getting the ladies to attend. We advertise all our meetings judiciously and well, and always study how to make our meetings most interesting, getting the local members to take part as much as possible, and occasionally getting outside help. As Halton was the banner county of the Province in membership, we encouraged our branches to each try to be the banner branch. This soon caused friendly rivalry, and then members were added rapidly.

Then we did not overlook the social side of the meetings; we cultivated a spirit of friendliness, and always tried to have a few minutes for social intercourse. We found having refreshments occasionally very helpful.

We made the annual meeting as representative as possible, doing our best to have some present from each branch, and leaving the business as free as possible to all. We use every means in our power to interest the ladies, knowing that they will then attend the meetings and become members.

Our officers from the beginning have had *heart* in the work, and this is as important as ability. Of course we want officers with ability, but we think ability is a secondary consideration. We must have officers, too, that are popular and well known, and they should be those who are of one mind and can work together. The faculty of getting others to work is an important one, and officers who can best accomplish this will succeed, other things being equal. We have been blest always with a thoroughly capable secretary, who has been prompt with all correspondence, and has kept herself in touch with the members throughout the county.

Now I have only given you some of the means we found suitable and most effective in building up our Institute in Halton. While we succeeded fairly well, as is shown by our membership, there may be other means better adapted to other localities.

As I said in the beginning we began with a membership the first year of thirty. I am proud to tell you that up to date for 1905 Halton has a membership of 594.

THE BEST WAY TO INCREASE MEMBERSHIP.

By Miss Susie Campbell, Brampton.

Had I been asked to increase membership instead of tell how to do it, I would have preferred the work to the talk. I have been in office only six months, and am not familiar with Institute work. Some of the ladies called on me and asked me to take the secretaryship. I knew nothing of Institute work. However, I went to the meeting and later on marched home with the laurels of District Secretary, and also Branch Secretary (Brampton).

My desire is to fulfil my trust, and my object in coming to the convention is that I may become educated in all rules bearing upon Institute work, and to listen to the excellent addresses. However, I shall give you a brief account of the work done in Peel County since June.

The county president and myself went to Bolton and met other speakers. We were told it would be impossible to organize a branch, as the people were not in sympathy with the work. A number of intelligent ladies were in the hall, and I could not see why, if an interest were aroused, a branch could not be formed, as there was plenty of latent talent ready to be cultivated. We succeeded in organizing at that June meeting, and from the reports received I am sure the foundation for successful work is being laid.

We went to Caledon East, but found the atmosphere was not so congenial. More will power is required to have good results, but it is worth striving for.

At Cheltenham we were entertained by the ex-president for the district. The day was perfect, and I think Peel might well be proud of her good-looking, intelligent ladies on the lawn of Mrs. Wilkinson. The prospects were that no branch could be formed that day. The lady speakers wanted to know what they were to talk about. I thought, "Now is the time to talk organization;" and we now have at that place a branch and also a delegate to this convention.

In November we went to Streetsville. We had often been told we might as well try to pull harrow teeth as try to get a hearing. Thirty-five ladies attended the meeting, and at once I discerned that they were of a superior class. The District President gave a paper on "The Use of Sugar as Food" and also good recipes for Chrismas candy, it being appropriate to the season. I gave a talk on "Christmas Giving" and also a demonstration of about thirty inexpensive Chrismas presents with patterns or designs. Unusual interest was manifested, and at this time I said, "How nice it would be to have a branch in Streetsville." We did not require a dentist at this meeting after all. We felt we were almost invited to form a branch. In twenty minutes we had the officers elected.

If I were to give a rule for increasing Institute membership it would be something like this equation:

Interest in others + knowledge of work + love of work + unity + combined efforts, will equal without fail an increase of membership.

Fifty members have been added to Brampton Branch alone since June, and over seventy throughout the county. Brampton is the banner branch.

The officers should be able to explain the use of the Institute, and also to impress upon people that they will derive lasting good by being connected with it. Much happiness and sociability will be dispensed, and a practical education will be given to all women.

Writing of minutes and commenting on programmes, interspersed with humor, has a good effect. Have something under cover for emergency cases. Send bright, stirring locals to newspapers, and have the reporters waiting with a blank space to insert the report of last meeting. Reporters are the most pleasing and affable persons on the street if you only give them a local. No "respector of person" are they. You may be Whig or Tory.

Many have the erroneous idea that the Institute is for cooking only. If stomachs are the only organs to be ministered to, I pity mankind. The eye, the ear, the hand, the intellect, all need cultivating and require apt teachers. God displayed variety, system, order in all his work. May we take from this the lesson to have a miscellaneous programme at our meeting? Variety to suit the most fastidious, and something adapted to all women so that all may take part.

Do not choose Mrs. Somebody for president because she has a little wealth or because her husband is a lawyer, M.P., or doctor, but have a farmer's wife, if she possess good common sense and be a practical woman. The farmer's wife may be able to teach the doctor's wife, and the mechanic's wife's address may benefit the society woman.

Institute work is in its infancy. How it will grow will depend on the foundation laid. Our Institutes are for the education of women, and the diffusing of ideas among all women, relating to home-making. We want a little nonsense with a great deal of sense in our meetings. We like to hear from cooks, needlewomen, nurses, home artists, M.D's., B.A's. and K.C's.,

also dear mothers and daughters, and we will then have a varied, instructive, beneficial, and humorous programme, enough to change the features of a long-faced Presbyterian!

Let us aim at not canvassing for members. We should make our meetings of such a high standard, that ladies will request us to have their names enrolled. I meet the ladies on the street, in their homes, and receive many members in this way.

In this noble Canada of ours, where the most influential men are bending their energies to nation-building and the general prosperity of this fair Dominion, is not this the time for Institute women to bend their energies to character building? The foundation is laid in the home, and the Institute is for making efficient women in the home. The hope of the country is the home: and the most important factor in the home is the woman who stands at the head of it. She should be an "efficient" woman. If we could convince women that the Women's Institutes are destined to accomplish a greater work for the home than has yet been seen, we would increase our membership more quickly. The day is coming when every woman will be proud that her name is enrolled, and others will be sorry for lost opportunities.

METHODS TO SECURE THE ACTIVE ASSISTANCE OF ALL MEMBERS.

By Mrs. M. E. Graham, Ailsa Craig.

To secure the active assistance of all members is perhaps the most difficult problem to solve in connection with our work. There are of course many reasons why this is so. Many women are content to attend the meetings, to listen, to see, and to absorb. But while they absorb much they are slow to impart. Some, unfortunately, though perhaps not wholly understanding the question under discussion, are too shy, modest, or retiring in their disposition to even ask a question. Consequently they often carry from the meetings ideas contrary to those advanced.

One member says: "No one should attend a meeting without saying something, either asking a question or expressing an opinion." This might be possible in a small meeting, for it is in the semi-social meeting with few present that many members will more freely express their views. But while it is not necessary for each member to say something at every meeting, all members should deem it a privilege to assist in some meeting. It is the one who prepares the paper or address who gains the most knowledge on the subject. Her study must be wide in order to impart.

In our Institute we meet this difficulty. Of an average attendance of from twenty-five to thirty-five members, there may be only ten or a dozen of these at each meeting. The remaining twenty to thirty may not come to the next nor have been at the last. It usually falls, then, to the ten or a dozen regular attendants to supply the programme and take part in the discussion. In such cases the president might call on those irregular attendants for expressions of opinion, as the quiet woman may have the most brilliant ideas, and requires only a little pressure to impart them. Some members have been known to give splendid papers or addresses when they have been appointed for that purpose. There are others who would simply stay at home if they knew they would be asked to speak. For this reason we have not been able to take the members in alphabetical order when arranging for members to take part in the programme. When we find that

some member is particularly successful in a line of work, the president or a member of the programme committee sends a friendly little note or makes a call, asking for a paper or demonstration on their special subject. In this way we have received some splendid assistance.

We find that having our programme arranged for the year and printed, each member having a copy, is a helpful plan, as there is then no excuse for the topics being left without some consideration. This permits of topics being brought up in conversation months in advance. We often sub-divide the topics, giving sub-divisions to as many members as possible. These are announced in the local papers.

In preparing a paper personally, I frequently advance extreme ideas, which are sure to call out discussion. Nevertheless we still have many members who will not render any assistance.

METHODS TO SECURE THE ACTIVE ASSISTANCE OF MEMBERS.

By Mrs. F. E Webster, Creemore.

If Mr. Putnam had asked us to tell of the methods that have failed to secure the active assistance of all members, it would have required more than seven minutes to do it. The successful methods are not so numerous.

In our experience the best success has been in following Mr. Putnam's advice regarding the "Roll Call," when each member is expected to contribute something to the programme as her name is called. Of course this is often met with the answer "I am not prepared." To overcome this the president should endeavor to cultivate the acquaintance of all the members, learn their special tastes, and what they are doing, so that by judicious questioning good points may be drawn from the unprepared member. Perhaps one member of her family has been ill. Ask what she has found to be the most successful treatment of the disease. If she has taken prizes at the fall fair, ask her by what methods she attained her excellence. If she is even moderately successful in any department of her work, question her about it. If any member is musical and an instrument is available, by all means let her make her contribution in that way.

I would say that the president who is an expert in asking questions is the most important factor in drawing out the silent members. I would like to give a word of caution here from my own experience. Do not press the questions too far unless you are sure of the ability of your audience to answer. I blundered once by assuming that the members present had read at least a few books of which they would have some sort of an opinion, and I tried to coax or force a discussion on books, which resulted in confessions of ignorance by some and angry silence by others.

A very practical meeting was held by one of our branches during the fruit season. One of the members opened her kitchen; the fruit was preserved, and each stage of the process discussed by all present. The same idea might be profitably carried out in a good dairy, or at the home of the woman who is making a success of chicken raising by artificial incubation.

I might mention one way in which I secured the help of some of the members. I went to their homes and dictated papers which they read and took the credit of writing quite willingly. Others I suplied with literature from which they took notes. I have found that those who are assisted in this way will require less coaxing and take greater interest in the work after-

wards. Of course we all understand why every member should take part in the meeting. Those who have taken part in this convention will go home better pleased and with a more exalted opinion of its success than those who have merely listened.

In an average Institute gathering a good programme is not likely to be forthcoming unless the officers are willing to give much time and energy to persuading and warming up the enthusiasm of the luke-warm majority.

Sometimes our members complain that domestic topics have been worn threadbare. An easy way out of this difficulty is offered in a perusal of the report of the National Council of Women. I wish to call special attention to this, because, although these reports have been sent to each Institute, I do not doubt that there are many who, like myself, lay them by, hoping to read them in the slack time,—which never comes. I, for one, would not have known how valuable the last report is if my husband had not read to me while I worked.

CO-OPERATION OF TOWN AND COUNTRY LADIES IN INSTITUTE WORK.

By Mrs. (Dr.) Kitchen, St. George.

My subject is a very important one, for on the co-operation of town and country ladies depends the success of the majority of our Institutes, if all the women in each of the districts are to be interested. To me the question presents few unusual difficulties.

In those parts of Western Ontario with which I am most familiar, there is little room for the sort of class prejudice, or discriminating caste lines that my subject seems to indicate. We find numbers of farm houses supplied with many things which we were wont a few years ago, to consider among the luxuries of modern city life,—hot air heating, hot and cold water in bath-room and kitchen; up-to-date utensils in the work rooms; the young people having the benefits of college training and education, bringing back to their homes the broadened desires and outlook of the wider environment; reading circles where a variety of magazines are passed from house to house, bringing all classes more closely in touch. But, apparently, this is not the condition in all sections, and the question is "How can we promote unity of interest in Institute work?"

First, organize and get the women to attend. If the usual methods, aided by the excellent suggestions given at this convention, and assisted by a popular demonstration on lines of local interest by one of the Government delegates, are not sufficient to secure their attendance, I would send out written invitations. Failing in these, try a personal visit by ladies who thoroughly understand the work designed to be carried on by Women's Institutes and the benefits to be gained therefrom. If they are ladies who thoroughly believe in its efficiency, they will be able to explain matters clearly.

The work must be drawn on broad lines. The idea that Domestic Science means only the preparing of foods—important as this is to the health and happiness of our families—must be dispelled, as must also the erroneous impression that because Women's Institutes are in some way allied with Farmers' Institutes, they must of necessity concern only farmers' wives.

Institute work must be taken up on the broad basis that it will benefit every part of the home life of every style of home; benefit all the inmates, old as well as young, touch all phases of life and all kinds of work. If there

is a woman whose love of home and family, whose pride in her district, and desire that it may be as advanced as others, pride in our fair Province of Ontario, is not sufficient to ensure her attendance, where benefits to all these may be secured, I do not know that it is worth while to take further trouble to gain her assistance.

An important factor in success is a wise choice of officers. They should be women who feel that this is one of the best means the century offers for the benefitting of our homes and our position as women; for the strengthening and building up of character, making life pleasanter, nobler, widening our outlook, and promoting the health and happiness of all classes. They should be women who hold that a women's education is incomplete and sadly lacking if she is not versed in all things that tend to make her a capable housekeeper and homemaker. They must be women of tact, intelligence, energy, enthusiasm, and common sense. I differ from the opinions that lay particular stress upon the paramount importance of the secretary's office. While in no way belittling the importance of that office—for a good and efficient secretary is invaluable—I think the success of the Institute depends very largely on the president, and on her possessing the qualifications I have mentioned, as well as many others.

After the attendance has been secured, how to keep up the interest is the question. Success in this depends largely on the quality of the programmes and the manner in which the meetings are conducted. Choose those subjects that are of interest and value to all classes, and prepare the programmes a few months at least in advance. Then anyone not able to attend all the meetings will choose the subjects of personal interest. The president should understand and be able to give information on each subject in order that she can supply the place of absentees, or, if a paper is not complete, can add necessary details. For assistance in this she should be able to depend on her vice-presidents. There should be no drones in any office. The meetings should be so well arranged that a woman would feel repaid even if attendance entailed a drive of five or six miles. If a meeting is a disappointment and a failure it will occasion much more talk and attention than half dozen successfully conducted ones. There should be no disappointments.

Do not be content with subjects already worn threadbare, nor with those that apply to work, or even methods of making work easier, admirable as those are. Have some intellectual subjects; something on current events. We are making history rapidy, fast building up a nation, and we women must keep pace with the times. Impart information on such lines that the busy woman with little time for reading can gather food for thought in busy hours, and information to impart to her children; and the society woman may find the wherewithal to make conversation pleasant and agreeable, and keep abreast with or ahead of her husband on affairs.

We want something to amuse as well as instruct. Music you will have of course, vocal or instrumental, the latter serving well for opening the meeting; recitations occasionally, and certainly carefully chosen selections for reading. The range of subjects is very wide. To the preparing, cooking and serving of all kinds of foods, varied by an occasional cooking demonstration, the study of their properties and values, so important for health and economical housekeeping; the care and training of children and kindred subjects, why not add a lesson on home dress-making, millinery and fancy work? Many of the dainty trifles that add to the comfort of the home or the beauty of the table can be easily made in odd moments if you only know how, and are very expensive if purchased.

If you have ladies unfamiliar with country life, introduce an occasional paper on some of its many interesting and delightful phases,—the springtime, with its ever recurring mystery of the awakening to life of earth with its myriad treasures of field and forest; the time of blossom-laden air, and the bustle of seed time and harvest, not putting in the foreground the work day side, nor clouding the back ground of the picture with trials and difficulties. If you have a subject that you think pertains exclusively to life in town, give it to some right clever country woman, instead of taking it for granted she knows nothing about it, and I shall be surprised if she does not astonish you with an excellent paper. I find that where the ladies are accustomed to work together in church societies, ladies' aid and missionary organizations, they understand each other's capabilities and find little difficulty in carrying on successful Women's Institute work.

The question box affords the means of giving variety to the programme, and also affords an opportunity to the timid woman to gain information on any desired point. If skilfully conducted, it tends to promote discussion, that feature in which so many fail, but which is so important. Every possible effort should be made to promote the free exchange of thoughts and opinions.

Have some good magazines and keep them well circulated. Every properly managed Institute has ample funds to supply magazines. Arrange discussion on subjects brought out in these, to ensure their being read. Keep the benefits and work of the Institutes well before the public. Make special efforts to add new members. Changes are constantly occurring in town and county alike. In one word make your meetings so interesting, profitable and enjoyable that no one can afford to remain away.

HOW BEST TO SECURE THE CO-OPERATION OF TOWN AND COUNTRY LADIES.

By Mrs. L. R. Lemaire, Weston.

May I claim the indulgence of the ladies, and hope that Mr. Putnam may not be sorry for having placed my name on the programme for a few remarks on the subject of "The best way to secure the co-operation of town and country ladies"?

First. I am convinced that we must believe in the efficacy of the Women's Institute, or we shall not be able to talk about it. We should take every opportunity to bring it before people as being a benefit to women. Never miss a chance to put in a few words concerning the Institute. This may be done in your home, on the cars, at social gatherings,—any time, anywhere. Of course we must be careful not to over-do it, but with a little tact we can always mention some good idea that would be of benefit to those with whom we are speaking. There are often occasions when we can tell of some delicious recipe, or of some useful knowledge we have obtained from some of the members.

We should invite outsiders to come and bring some of their friends with them. By these means we advertise our Institute and in many cases secure new members.

Second. We should have a programme that is attractive, interesting and beneficial. Then those that read them will be led to see for themselves that our Institute is not only for a cooking class, but also for imparting knowledge in hygiene, sanitation, ventilation, and everything pertaining to

the welfare of woman. I believe in distributing these programmes to people whom we think may possibly become members.

Third. We must be sociable. Let us occasionally have a cup of tea quite informally at the close of the meetings. A little "gossip" will do no harm, and incidentally we may tell of our experiences, failures and successes in our different work. In this way we may often bring out ideas, and set the ball rolling. Truly there has never been a meeting at which we have not learned something new and beneficial.

Not only may our meetings be sociable, and a resort for getting recipes to cater for our homes, but let us also have intellectual treats. Let us have a good reading or a comic story,—for I believe we do not laugh half enough to keep ourselves young and in good spirits and good health.

Do you not see that in our meeting we thus become broader minded, love one another more, and incidentally are taken out of our old routine.

It has been my desire to get young girls from the ages of fourteen and fifteen to attend these Institutes. As yet I have met with very little success, but I think by a little help from others I shall yet succeed.

Thank you sincerely for your very kind attention. I will conclude by giving you our motto: "Loyalty, Sociability and Progress."

COOKING DEMONSTRATIONS.

By Mrs. J. W. Cohoe, New Durham.

When the secretary and president of our Institute went to the County Council asking for a grant to aid us with our work, the members that we spoke to privately assured us that they were in favor of helping us, for there was need for our women to learn to cook. Personally, I thought that was the least needed of any of the subjects connected with institute work. After placing before them the aims and objects of the Women's Institute, also what we as a District Institute wished to do at home, and our need of money to carry on our plans, the warden kindly assured us that he was very much in sympathy with our work. He thought our wives and daughters ought to be taught how to cook good meals, for without them the homes of our country would be very badly off indeed. He rather inferred that there was *need* of this training. I fancy these men all thought it was the other fellow's wife that needed the training. The men all agreed that the cooking of good meals ought to be encouraged.

The delegate with the "cooking kit" has certainly been a drawing card at our meetings, though I know that sometimes it is a decided inconvenience and care to the said delegate. I was delighted and instructed as I went around with the delegates in June, and saw the dainty and toothsome dishes made from unsightly and ragged pieces of meat.

On the farm the vigorous exercise in the fresh air creates such a hearty appetite that we are not worried with left-overs. Therefore the underlying principles of the cooking of foods is more important.

Usually we think of elaborate and fancy dishes when we speak of fine cooking. I was pleased with a sentence in the August number of "Good Housekeeping," in the article on "The Shaker's Fine Cookery." After describing the materials used, and the manner of cooking and serving, the writer says: "When we remember the intelligence and rivalry of the cooks we begin to understand why the food although so perfectly simple is so delicious." Good work has been done along this line in getting the mem-

bers interested and the Institute started, but I believe that in many instances where the members are interested and attend, the principles of cooking, sanitation, ventilation, and all other subjects that women are interested in as home-makers, might be taught as well by lectures, addresses, or talks, as by demonstrations. One sister will get a helpful thought and pass it on.

An illustration occurred to me. You remember that Mrs. Laws described to us at Guelph a year ago, at our convention, a fireless cooking box. Many heard of it here for the first time, then read about it in the papers, and tried one at home. This same box is being used in the far west in Seattle, where fuel is high, and in the south where it is too warm to have much fire.

It is the sweet spirit of helpfulness coupled with a willingness to learn, that is going to make our Institutes a success and a power for good.

COOKING DEMONSTRATIONS.

By Miss Lulu Reynolds, Scarboro Junction.

Demonstrations have done and are doing the work for which they were intended. For introducing the work, and for newly organized Institutes, probably nothing could take their place in creating interest, thus teaching the lesson for which they are designed,—that of the proper method of cooking the two important divisions of food, viz., proteids and carbo-hydrates.

The older Institutes should now be prepared to advance along other lines, having heard the same story, with a little variation, a number of times. Going to a meeting, seeing a demonstrator make two or three new dishes, is not very instructive to the average housewife. It may be entertaining, and the dish may tickle the palate; but too many housekeepers think entirely too much about cooking already. If the housewife would do less cooking and more thinking, reading, and travelling, the standard of our farming communities would be raised to a higher level. Too many women in country homes do not improve their minds as they should. The scarcity of help in the home and on the farm, make it hard to find time for quiet reading and thought, which is so essential for the development of an all-round mind.

If we could so plan our cooking and our work that we could spend even a few minutes each day in systematic study, we would soon become interested, would benefit ourselves, and in turn be able to give useful information to others.

There are numerous subjects which should be intensely interesting to the housekeeper, such as gardening, care of plants, training of children, nursing, ventilation, sanitation, hygiene, physiology, dietetics, and many others.

The narrow-minded person is the one who reads little, thinks little, travels little, but who too often prides herself on her home-keeping qualities. These are all right in their place, but it would be just as well not to keep them there.

Cooking demonstrations have the tendency, of course, to encourage good cooking and more of it, when too often the class that is drawn to the Institute meetings needs discouraging in this very line. If we could but get

together the class that forms such a large part of our communities, demonstrations would certainly be invaluable for an indefinite time; but it is the intelligent housekeepers who largely attend our meetings. Cooking in schools would be the only way of reaching the former class.

We must progress not on one line, but along all lines; and whatever we do let us do it the best of our ability.

COOKING DEMONSTRATIONS.

By Mrs. Colin Campbell, Goderich.

I believe the demonstrations are productive of much good, and prove a good advertisement for the Women's Institute. If you desire a large attendance at an Institute meeting, just announce that there will be a demonstration in cooking. The majority of members take a deep interest in this feature of our work, and are willing to give what information they can, as well as receive what others study so diligently to prepare.

After one or two demonstrations have been given by delegates sent out by the Department of Agriculture, several Institutes have taken up the study of the relative value of foods, uses of food to the body, etc. I consider the study of foods one of the most important topics to be taken up at Institute meetings. There are many things we all want which are not really needful for life. Food we must have or die. Our food must be inviting. The road to the stomach is past eyes, nose and tongue, and each of these gate-tenders may have somewhat to say about what shall pass. If their protest be unheeded, a psychological remonstrance through another set of nerve centres reaches the stomach by another route. If vigorous enough it may at once return the objectionable stuff. If of less vigor it may so impair the functions of the stomach that the digestion is imperfect, which means suffering to the whole body.

We as a nation consume quietly, and to the great and continuous benefit of the patent medicine maker, food poorly chosen, poorly cooked, and warranted to ensure the continuance of dyspepsia. It is the function of good cookery to make all prepared foods as inviting as possible. I would suggest that Institute members study the chemical, physiological and economic value of foods.

THE EFFECT OF HOME INFLUENCE UPON OUR NATIONAL AND POLITICAL LIFE.

By Mrs. A. H. Backus, M.D., Alymer, Ont.

Looking casually at the subject it would appear that woman's influence upon the national political life of a country was important, but a nearer study shows that national history is written at the fire-side by our mothers; and if our national history is mean and contemptible, it is because our mothers are weak and thoughtless, and if it is brave and just, it is because our mothers are patriotic and thoughtful. The fact is acknowledged and deplored that our women lack patriotism, taking little interest in either national or political questions; and it is the same in both country and town.

In the country is the work of the house, in the town social duties, that fill the lives and the thoughts of women. And the disregard of these questions,—(our political and national life) is already showing in the national and political doings of our country. Patriotism and integrity are becoming unique virtues; men will do in national and political affairs things they would never dream of doing in the commercial world. We are losing that fine sense of honor which should be our proudest boast, and the cause of this is the indifference of women,—(our mothers and home builders) to national subjects. The love of country has ever been considered one of the highest virtues, it has ranked in all nations as next to love of God, and in those Empires which have been greatest and during the periods of their noblest prosperity, you will find patriotism was a household text.

"If you would know the political and moral status of a people, ask what place its women occupy," says Louis Aime Martin, that upright and talented French writer who died in the last century; and in the treatise—"Education des meres des famille"—from which our quotation is taken, he asserts that the only means of improving mankind, is to educate women in such a manner that they may be enabled to form men of virtue.

There is in America a good translation of this book, and it contains many practical and useful hints for women.

Harder in his Philosophy of History writes,—"There is nothing, I think, which marks more decidedly the character of men or of nations than the manner in which they treat women." And recollect, the manner in which men treat women is entirely in the hands of women.

The sons of brave and upright women treat women with consideration and respect.

Truth and justice are the foundation stones of character and they must be laid in youth by the mother. There is no chance work about it, the mothers build the character; and if our men are weak and characterless, it is because our women are lacking in courage and integrity.

Women who are worthy do not become the slaves and toys of men. Neither do their children grow into bullies and cowards. There is an old proverb which says,—"Show me a man's dog and I will tell you the kind of man he is;" but a better proverb is "Show me a man and I will tell you the kind of mother he had."

Perhaps women are too fair to blame men if national and political conditions are not just to women, but the blame must be traced farther back; in fact we can follow it to the home where the mother forgets her duty to herself and becomes a household drudge instead of a woman of thought and reason.

The day that God sets the seal of Motherhood upon a woman she should feel the sacredness of the position she holds. You know we hear very much in these days of "Race Suicide," and we have Mr. Roosevelt of the United States and Bishop Williams of Ontario, (with sundry smaller lights), screaming for a larger birth rate. Now perhaps if these gentlemen would give some practical solution of the problem of domestic help before starting out with their clubs to enforce their wishes, the results might be more satisfactory, and make reform in this particular at least possible. However until some practical answer is given to this problem men and women will continue to regulate the members in their families, and that without breaking the laws of either God or man. We have in country and town habitations where women are weak, and men thoughtless, where restraint is unknown, and sanitation unheeded, where ideals are low and ambition base, and in these so called homes, children galore. And it is from these habitations our jails

and reformatories are so plentifully recruited. Large families do not necessarily indicate the intelligence or prosperity of a people, and a prolific race may be of short duration. Quality should be the first consideration. A few good, strong, temperate, brave men and women is better than a host of weaklings.

Of course you all know that the history of the past reveals the fact, that when a race, (be it in the lower animals or higher animal man) ceases to fill the need or part for which it was created in the world, that race becomes extinct. We can see an example of this in the passing of the Indian. The mysterious laws of nature work in a way which we are only beginning to learn; but so long as there can be found "within the city ten righteous it will not be destroyed."

This seeming loss of the instinct of philoprogenitiveness in the world of to-day, is simply nature's way of saying these people are not worth reproducing. And when you look about at your immediate acquaintances, you will see how many are unfit, physically and mentally speaking for the duties of parentage; and the world is better off that no offspring has been given them. The cause of this condition is the lack of proper education and outdoor exercise for our young women, and the remedy is already being applied in our open universities, and the larger life given to women. In the early days of this country, when the homes were scattered and social life a thing to be enjoyed only occasionally, when men and women had one and the same object, the making of the home, children were plentiful and welcome, and being welcome were strong and happy.

But there came later that period of transition, girls were in many cases uneducated, boys became selfish, and being uneducated, women placed too high a value upon social success. Young men clamored for place and position, to get rich quickly was the object of man, to dress and be in society the ambition of women, so children became a nuisance.

But this was simply a transitional period among a certain class, not a universal thing, and a better state of affairs is now coming to pass.

Those careless ones even are learning that motherhood must be revered, and parentage is a sacred duty, not an idle holiday, and all the world is realizing that Home means as much to the nation as the individual, for it is in the home that all national greatness is founded, and the object of home influence upon the national life is so far reaching that not a monument can be placed in a public park or a vote be given in our houses of Parliament that cannot be traced back to the ideals, and traditions of home and childhood.

As an illustration of this,—About two hundred and fifty years ago Geo. Hopkins left to the city of Hartford, one thousand pounds for the building of a Grammar School, and to-day in that city stands the square red brick building and set in its walls in white brick, a few feet beneath the cornice, standing out distinctly, that 'he who runs may read' is this text, "And all thy children shall be taught of the Lord, and great shall be the peace of thy children." Isaiah 54. 13.

It is not difficult to picture the home life of a people who would choose this form of decoration for their public buildings. Homes crowned with Godliness and fastened with integrity.

Neither is it a matter for surprise that the children coming from these homes were brave and intelligent, and to-day in their descendants we see how far reaching is home influence; The New England state of Connecticut has supplied that nation with many great and good men, and as we would expect from this circumstance, the women of Connecticut are famous for their piety, their intelligence and their strength.

A child's education should begin at least nine months before its birth. "I will give him unto the Lord all the days of his life," said Hannah, and thus made possible Samuel's pure life even before he was born. Perhaps the first thought that comes to the mother when her babe is put into her arms is, how am I going to protect this child from the idle vanities that have so often carried me off my feet?—And even this thought helps the child. To trace the mental and moral influences of the mother upon the infant, particularly during the period of nursing is most interesting, and a knowledge of these influences every mother should have in detail, for it means moral and mental well being, not only to the child, but for all its life long; and not only for the present generation, but those who follow, reap the benefit of the knowledge and wisdom of the mothers. Thus it is the foundation of character is laid. Our fathers give us our physical strength, our mechanical skill, our musical talent, our mothers supplying our spiritual integrity and mental ability.

It is also the father's privilege to furnish the means for physical necessities of wife and children. It is the wife's and mother's privilege to see that this means is wisely used. So our girls should be taught the value of food materials. The physiology of dress, and all pertaining to sanitation and health.

As the child grows it is the mother who must look after its environment. Food, raiment, fresh air, proper breathing, exercise, companions, books, and all those sacred and precious memories which should be included in the word Home. And the dearest of all, is the memory of an intelligent mother.

There can be no pleasure in the memory of a household drudge, no pleasure in recalling a work worn woman, indifferent to the great world about her, a slave who wrought only for her husband's and children's physical welfare.

We want to remember our mothers as good women, who ruled their households with wisdom and love, who laughed and made merry. Who had their own thoughts on the question of the day, but were ever tender even to the lowest forms of animal life. And this is the kind of mother that fills the nation with good brave strong men and women, and this is the sort of mothers you will find here and there in our country homes.

And when you see great and good men working for justice and the country's good, not for their own aggrandizement, you know there were great mothers who made it possible for them to be. There is no happier thought in the world than the thought of a just mother, and perhaps none are more rare. This is often the weakness of the home, that mothers have a different code for the conduct of boys and girls. While the boys are out fishing, playing ball, and all sorts of sport, the girls are kept in the house at work. And when the boys return from their games, the girls are expected to wait upon them. Now there is no justice in this, and as the weakness of the home must ever become the infirmity of the State, boys, being taught in youth to ignore the rights of their sisters, become selfish and are not always either just or gallant in their dealings with women: and even in legislation, governments have been known to pass laws not altogether fair or generous to women.

So you see the mother's training and example affects in a disadvantageous way the interest of her daughters. Now as the girls require as much fresh air as the boys, and as women have even greater need for physical strength and courage than men, enduring as they must pains and dangers from which men are quite exempt, girls should be given every opportunity in out door sports to develop both courage and strength.

It is the brave mother who gives the world brave men; and neither physical strength nor moral courage can be developed in the growing girl, by

keeping her in the house. Let us give our girls the same chances as we give our boys to equip themselves with strong bodies and clear minds. The welfare of future generations depends upon this.

A nation's greatest wealth is the happiness and prosperity of its homes, and as it is not possible to make homes without women, you see then how much the nation is indebted to women, and what responsibility lies in women's hands, and why they should be patriotic.

Concerning the home, it is the mother's land to control. She must regulate the sanitary conditions, she must look after the mental influences. She should interest herself in the schools and school houses where her children attend, and the man of the house should aid her in all her efforts.

Then in the moral affairs, it is the mother who must fix the ideals, who must set the standard of integrity. So you see women must think for themselves and in the sanctity of Home (as well as in co-operation with others interested in the great national work of Home building) work out for themselves and their children a scheme of right living and right thinking.

Concerning the education of boys, there is one lesson which should be impressed early in youth, and that is consideration for all animal life. Teach them how dependent we are upon these patient, useful creatures (our domestic animals); let them realize that without them we could not live, and that we owe them a debt of gratitude for all they mean to us. Let boys feel that cruelty, and the indifference to cruelty are the characteristics of cowards, and the real mark of a gentleman is kindness and consideration to all creatures depending upon him.

Perhaps the greatest need in the education of our daughters is to give them some knowledge of our civil laws.

You all know the legal maxim which says, "Ignorance of the law excuses no man" and much less does it excuse women. There are many cases on record where women have signed away their birth-rights and dowers, not knowing what they did.

An old custom which has caused more heart aches and tears than the world has ever dreamed of, must be changed before we can have the model home, that is the custom of leaving farms and estates to the boys, ignoring entirely the claims of the girls.

Our girls must be given full justice in the Home before the evolution of the best of womankind can be brought about. And until we have the perfect woman we cannot have the perfect home, or the perfect nation.

In the striving for the ideal home, there must of necessity be many failures, and many disappointments, but in the very act of striving we are building up a nation, and our mistakes and failures are helps for the future; for it is out of our mistakes we must build bridges for our children to the promised land.

ENTERTAINMENT IN THE HOME, GAMES, ETC.

By Mrs. Jas. Armstrong, Gorrie.

There is no sight more pathetic than unamused childhood, and our strongest sympathies are aroused for the child whose mother pushes it away, telling it to "go play with something," when the poor little thing has exhausted its resources and knows not what to do next. Children should have two distinctive kinds of amusement, those that are active—yes, and noisy too, and bring into play all the muscles—and those that are quiet, bringing into use as much the mental as the physical faculties. It is easy enough

to find plenty of the former, even though the mother possesses but little inventive genius along that line, for there are few children that cannot think of something to keep themselves going. But when the mother is through her active work and sits down to sew, read, or rest, she usually wants the little ones also to be quiet, and is often sorely puzzled to know how to keep them so. The happiest children are those whose minds are full of something all the time. But there is a vast difference between having something to interest and something to amuse them. The former causes a state of perpetual content, the latter calls for perpetual renewal. Some parents keep their children quiet without any apparent effort. Enter their homes and you will find that the attention of even the youngest is claimed. Perhaps a tower is being built, block after block being placed in position, and the little ones watch its progress with breathless interest. The little minds are alive with ideas. Persons who have the gift of interesting children have usually the greater one of teaching them to amuse as well as interest themselves. Quite young children can be trained to amuse themselves. The children of the poor learn this lesson of necessity. The children of the rich are happy in proportion as they are taught it. Happy the children who learn, before they can talk, to amuse and interest themselves, and happy the mothers who have the gift of teaching their children this lesson. No sensible mother expects old heads on young shoulders.

Let the children see that you take an interest in their enjoyments. Enter with a will into their amusements. Spend some time to brighten their lives as you go along from day to day. Encourage the little ones to sing; music lessens care and heartache. Often and often the words of a song linger in the heart after the voice is silent, and keeps alive the courage that had almost died. Song sweetens toil, and it is imperative that parents should aim to increase this means of happiness for the children, if for no other reason than to strengthen their minds and hearts for the labors to be borne in older years.

Rainy weather is hard on children, because it often deprives them of their active out-door amusements. A child's mind is so active that it is never without employment. What wonder that the busy little hands, guided by a busy brain, often finds so much mischief to bother mother. There are so many pretty things for them to do, if the mother will only take a little forethought for them. What fun a child can have with an old catalogue and some pencils. The flower seed and fruit catalogues come into nearly every home, and a few pennies will buy the pencils. They will afford an entertaining occupation, from the little mother to the quite big sister, who can try to color the sweet peas and pansies. All small children like to sew, and boys as well as girls ought to be encouraged in the use of the needle, and thus they will spend many quiet hours that will be instructive as well as amusing. A slate and pencil will afford much amusement for little folks, and a pencil and scrap of paper will often drive away a fit of the blues. Children should be encouraged to write letters and read them too, not only as a source of amusement, but education as well, and many children have spent many happy hours at this amusement. Making a scrap book is a never failing source of amusement for children and young folks as well. If the children are old enough to sew and make dolls' clothes, dolls will be found a source of great pleasure and profitable as well, in that it teaches them to sew.

Some mothers may say, "these amusements are mostly for girls—what about the boys?" Our reply is "teach them just the same as the girls." The best safeguard that a boy can have in after years is an early training and playing with girls, and let the girls join the boys in their games. The

boys will be manlier, more considerate men, kinder and more courteous. The boys will learn that it is as bad for them to be immoral as for their sisters. I do not like to hear a mother say "I am out of patience with my boys, with their noise and disorder. I never have a moment's peace until they are out of the house." Oh mothers, what are your homes for, if not to protect, develop, brighten and make happy the lives of its inmates, including those same troublesome boys? The noisiness and restlessness which characterizes boys at this stage is simply a superabundance of energy possessed by them, which, if wisely directed into a proper channel, would make of them now, bright, chivalrous, loving "Mother's boys," and later, noble and high-minded men.

Supply interesting reading for your young folks, such as books of travel, biographies, books on exploration, children's books on the sciences, geographical and historical stories, a few of the classics, and some magazines and papers and current events. Teach your boys to take an interest in the natural and animal world. Talk to them, and fill their minds with the good, useful and wonderful things of God's kingdom, and there will be little room in it for the vice and cruelty that otherwise might some day break your heart. Some one says, "I have not time." You must take time. Do not fall into the mistake so many mothers make, that their chief mission in regard to their children is to keep them well fed and well dressed, but enter heartily into all their pleasures and frolics. Encourage your children to urge you to join all their games. Look at your boys' curiosities,—for what boy has not his pocket full—talk of them; be interested in your girls' doll clothes, and, as they grow older, in all their entertainments at home and abroad. But you complain, "They make such a litter and mess." Yes, undoubtedly they will, but what is a little disorder in comparison with the salvation of your girls and boys. If you have not an old cupboard or closet in which your boy can put his collection of curiosities, nail up some shelves in a corner of the woodshed and let him have it for a museum. Encourage him to observe the habits of birds, animals and insects. Talk to him and tell him simple stories about them. He may never be a great philosopher, but you will make him observing and happy. It is yours to guide that boy aright, to build him up in unselfishness, kindness, purity of mind and word. No game of politics or business in after life will ever be so important to the man as the ball and top to the little lad; and no future enjoyment of the little girl will ever be greater in degree and kind than her present pleasure in her dolls and playhouses. Remember that indulgence is not always kindness. I remember reading a story once of a mother who let her favorite son saw up all the drawers of a handsome bureau in his playroom, placed there for his tools. He destroyed all the drawers and received no reproof, his mother simply sending for a carpenter to replace them. Of course, some boys are naturally more destructive than others.

Childhood's capacity for pleasure is immeasurable. It is wise to encourage the habit of making the house cheerful, and its inmates happy. This world is not a vale of tears, nor were the people in it intended to be miserable. God's sunbeams dance and sparkle as brightly on the bare kitchen floor as upon the drawing room carpet, and the cottager's child should be, and has a right to be, as happy as that of the millionaire. It is the spirit within, rather than the materials without, that makes real happiness. Pleasures may be high-priced, but real happiness is no dearer than day-light. It is certainly most commendable to love to make young folks happy and to help them to be so. Reading or telling stories is a source of great entertainment to children and young people, while, by constantly leading them

to dwell upon the good and beautiful in life and literature, their minds will be so filled with helpful and inspiring thoughts that there will be no room left for thoughts of a demoralizing character. A child must have a large measure of love in his nature; and just as plants need the sunlight, so he must have love, if he is to attain the highest physical and mental development of which he is capable. A dull, dispirited looking child will brighten up wonderfully after an affectionate little frolic with one of the elders of the family. Simple amusements, merry innocent jokes, much laughter and play form a most important part in the upbuilding of a good constitution. This is neither spoiling or indulging children, but giving them what is theirs by divine right.

Sports that tend to give a child an ideal of physical perfection are good. The small boy's boast of "feel my muscle," is a good one to encourage, and if an appeal to a girl's vanity results in squaring her shoulders, elevating her chest and clearing her complexion, by all means make that appeal. As mothers we should take an active and practical interest in our children's entertainments and games. It seems in keeping with the fitness of things that children should interest themselves in gardening, for nature is seen at its best among the flowers. We always associate freshness, purity and sweetness with the flower garden, and these surely are things which it is good for children to love. There are few boys and girls who are not fond of plants, provided they are taught to regard them intelligently. Give the children a garden which they may call their own, teach them how to work it properly, explain to them the reason for the various processes, and they will take a great deal of entertainment from their garden, Children should have plenty of games and be allowed to make a noise. Noise making is said to be a most hygienic exercise for children. Young people also must have entertaining amusements. There are a great many games that will help to while away the long winter evenings. Mothers, join with the young folks in these games! Almost all homes have a piano or organ. Let it be heard very often, and the fathers and mothers should join with the young people in singing. The christian home includes the parlor with its games and amusements of our children and young friends. It is as important and responsible as the nursery or any other part of the home. The choice of companions and amusements are all involved in the home parlor. If we would, therefore, escape the shackles and contamination of corrupt society for our young folks, we must hold the parlor sacred and give to it the air and bearing of a moral aristocracy. In the parlor or in their games they often make their choice of companions. Their hearts are developed, their minds trained for social life, and influences are often brought to bear on them, which may determine their weal, or their woe. Christian parents should guard their parlors from social corruptions. It is, therefore, beneath the dignity of christian parents to permit their parlor to become in any way a prey to immoral and irreligious associations and influences. Here is, indeed, the great fault of many Christian parents, that they do not exert that guardian care they should over the social relations and amusements of their children and young friends. Guard your parlor, therefore, from all questionable amusements. Enter into all your boys' and girls' amusements and games. Ever remember, mothers, that the future condition and happiness of your children largely depend upon the kind of amusements you admit into your parlor. Encourage them in all innocent amusements and games, enter into them heartily with your children. But recreation is not necessarily time spent in play alone, an idle or a leisure moment when nothing shall be accomplished. A change of occupation is often recreative. Nearly all domestic work is healthful exercise of muscle and strength, and

it is the privilege of the wise parent to make it so pleasurable that children will enjoy a portion of their time spent in such work as much as if it were spent in play. To spend one's whole time in amusement and pleasure is neither profitable nor right for young or old.

TRAINING AND INTERESTING CHILDREN IN THE HOME.

By Mrs. W. P. Fletcher, Drayton.

At first sight the subject may impress one as being very simple and easily dealt with. Some may say, "Every mother understands her own children and knows better than any one else how to train them." While this may be true to some extent, the average mother has not time always to think before she acts in dealing with her children. When one looks more closely into the subject it becomes an endless study, which it would take several afternoons to thoroughly discuss. We may at best offer a few suggestions on the general principles of training and interesting children in our homes.

Some one has said that the training of a child begins with its great-grandfather, which explains itself. If parents would have well-trained, home-loving children, they should be very careful of their own lives. Some of us may be inclined to be rather careless about training our children until they reach what we call the age of accountability. We say that they will learn in time what is wrong and what is right. But let us never forget that the earliest impressions are the most lasting, and that the man is the grown-up boy, and the woman, the grown-up girl. We would not say, keep the child out of the parlor and away from the company until he is old enough to know how to act, but rather, let him use the parlor, teaching him how to respect it and its furniture; let him eat at the same table with the company, that he may learn how to act by precept and example. It will not take him long to learn if he has been taught to act properly in the home circle. It is never pleasant to have a child grow up bashful and shy of strangers. Where possible it is preferable to have a play-room for the children, but even there they should learn to have a place for everything, and before leaving the room to have everything in its place. This would save much scolding in after days, when Willie persists in throwing his cap on the sofa, and May leaves her school bag lying on the floor.

A child must have true respect for his mother, if he would love and obey her. Firmness is very effective in securing the confidence of your child, and rendering the work of training easy and successful. In commanding, use a kind firm voice, think before speaking, keep yourself under control, and having made a right command, stop at nothing short of complete obedience. Reproof is an efficient corrective of most faults. The child-heart is ever responsible to reproof, rightly administered. If a child abuses a privilege, he should be deprived of that privilege for a time at least, until he has learned its value. To threaten a child is never judicious, and to be continually threatening is worse than useless.

The habit of fault-finding is a curse to any mother. Her constant complaints and reproofs soon become utterly devoid of effect, and gradually her influence over her children vanishes. So many of the faults of children arise from an over-flow of childish life and energy, that the judicious parent will find it discreet, as well as kind, to let them pass unnoticed. But serious reproof should invariably follow serious faults, and violation of

principle should meet with suitable punishment. But, while ignoring unintentional, thoughtless errors, be ever on the alert to discover any sign of honest effort to do right. Nothing can strengthen the half-formed good resolutions of a child more effectively than the consciousness that a wise, loving, sympathising mother is ever ready to encourage and assist by a kind word or look, rather than watching to punish for every trivial fault. Use corporal punishment as a final resort, when all reasoning and persuasion has failed. Study the nature of your child and do not be harsh with him, lest you harden his nature. The end of all punishment should be to teach the child to do right because it is right and to avoid wrong because it is wrong. Under no circumstances allow your child, if he does wrong, to be frightened with tales of such things as goblins in the dark, or policeman. A child, thus made timid while young, in many cases retains the timidity through life. Too many mothers and grown people thoughtlessly make cowards of children in this way. The training of children is mostly confined to their early life. A child, well trained from its earliest conception of right and wrong, knows how to respect its parents and strangers, young and old, as well as its home and surroundings.

As children grow older they should be taught that work is honorable and idleness is degrading. Every child should, in some way, be fitted for after life. The mother should, not too consciously, be training her daughter for future responsibilities. A mother should know her children, their feelings, purposes and aspirations and be thoroughly in sympathy with them that she may help them to lay deep, firm foundations for their future calling in life.

The great question with the mothers of to-day is how to interest children in their own homes that they may not seek entertainment and pleasure in questionable places. Here we would suggest that the parents manifest an interest in anything that interests the son or daughter, and do not turn a deaf ear to his or her enthusiasm. Recreation is always necessary to a full rounded manhood or womanhood. Take part in, and encourage any form of recreation that will help the young people to be honest, manly and strong; and avoid that which is weak and debasing.

Music in the home is one of the first and most successful agencies in securing a love for home. If the home is kept well supplied with good wholesome reading, including the latest works of the best writers of the day, interspersed wih the best of fiction, our boys and girls will not need to seek the trashy novel that poisons the mind and makes it incapable of appreciating that which is elevating and ennobling.

And added to this, let us ever remember that it pays to have our homes attractive in appearance and surroundings.

THE ENTERTAINMENT OF THE GUEST ON THE FARM.

By Mrs. J. S. Cameron, Port Elgin.

When I consented to prepare a few words for this meeting I was so dazed as to be unable to say what part of a generous subject I would prefer to attempt to discuss. So in consequence I shall, no doubt, roam all over the farm.

In the first place, I have an uneasy feeling that it is not exactly hospitable to discuss the subject of guests at all.

Is there a housewife who has been free with her hospitality who has not been imposed upon, who has not had careless and thoughtless guests who have tried her soul and made her wish that she could close up her house and escape somewhere? That is our excuse for the discussion. Now, in order to avoid being one of those disagreeable guests, bear in mind a few ideas. Do not make surprise visits—they are always surprises, but rarely pleasant ones to any one concerned. Some housekeepers are in daily fear of surprise visitors, if they have some among their list of friends, and keep their work at a high tension in anticipation. The postal rates are now so reasonable that one cannot excuse their negligence, on that score. It is only selfishness or laziness on the part of a prospective guest, and surely the hostess has a right to know when visitors, whose presence means a certain disarrangement of the household, are expected, and for how long they intend remaining.

Keep your appointments, if possible. If you have made an engagement, no matter how, the hostess is expecting you; so do not allow a little thing to prevent you keeping it. It is inexcusable to do so.

Another annoyance is to have meals delayed by guests. In a busy household this is often serious, and no matter how entertaining a guest is, the men folk prefer to eat at the appointed time.

Do not get up hours before breakfast and get in the way of the cook when she is busy. She needs some time for her work, and if she is not an experienced demonstrator, much prefers the privacy of her kitchen when busy. Personally, I do not often encourage my guests to be in the kitchen. I am delayed and much hindered in my work.

Elizabeth, in her "German Garden," speaks so clearly my sentiments when she says that she never enjoys her guests until after dinner, when her "soul wakes up" and the cares of the house are off her shoulders. So when I am visiting and am sent to the parlor I always go, for that is the part of wisdom; but I dearly love to watch people cooking.

Sometimes guests are very untidy and leave their personal belongings about. Some borrow incessantly, especially toilet requisites. I have found it simply impossible to keep my pin cushion stocked with toilette, and safety pins, and hat pins. The worst, the very worst thing that can happen, is to have a spoiled child and his devoted slave of a mother stay with you a few weeks. He eats green fruit, regardless of advice, and is sick and peevish. If anyone is in the hammock or porch seats, he cannot be happy until he has tried them all. He interrupts all conversation with his demands for notice and praise. He is a nightmare at the table where his cold milk, hot water, tea and sugar mixture is either too cold or too hot, too sweet or too much. He asks for articles of food not on the table.

But there is an art in being a delightful guest and having a spirit of adaptation to surroundings, an inability to see anything unpleasant, a dislike of gossip and scandal. Indeed, the responsibilities of the successful guest are quite as great as the hostess, and require quite as much effort and time. One must be wise, kind, thoughtful for the comfort of others, unselfish about drives, walks, and little pleasures, and as entertaining as possible.

We might say "if one had a beautiful home, a good cook, plenty of resources, one could be an ideal hostess," but it is more important that you really want your guest, and if you do you are ideally hospitable.

A few simple thoughts that come to me about the entertainment of guests: Do not fuss and worry about their entertainment like poor Martha (we are all Marthas sometimes). It is all very well being Mary or Martha,

the difficulty lies in the necessity of being both rolled into one; and we know that our guests do not come to our homes for the food, but to visit us, though it is also important that they receive some of the former.

It is a habit I have to curiously turn to Boswell's "Life of Johnson" to read the great man's views on different subjects. This time it was in reference to Boswell's proposal to go to live in the country. "Don't set up for what is called *hospitality*. It is a waste of time and a waste of money. You are eaten up and not the more respected for your liberality. If your house be like an inn, nobody cares for you. A man who stays a week with another, makes him a slave for a week." Boswell protested, "but there are people who make their houses a home for their guests and are themselves quite easy." Johnson, "Then, sir, home must be the same for the guests and therefore they need not come," which was very disappointing, because there is nothing more delightful than to visit at a country house.

But Johnson was a great visitor and depended very much on his friends and would fret if they did not come in regularly to drink tea. Still there was much truth in his brusque remark.

When Mrs. Thrale complained to him that she wished to have young people come in for the evenings, but did not approve of card playing, which appeared to be the principal amusement, he told her to prepare some nice confections and sweet meats and a dish of tea and they would come for something to eat when nothing else offered." And this was one hundred and fifty years ago.

Do not begin house cleaning before the guest has got quite away.

It has become quite the custom for guests to do without breakfast if they are very tired and prefer the sleep. It is better to wait for dinner than to have a ten o'clock breakfast.

I have found it a great convenience to send up a tray to those late ones, then the dining room and kitchen work is not delayed, and many people appreciate this luxury. If there is a pleasant home feeling and the guest and hostess are congenial and have some books, music, and comfortable chairs, with shade in summer time, and heat in winter, and an old safe horse to drive around about, the situation ought to be ideal.

PLEASING MANNERS.

A person's manner generally indicate his character. They are an index of his tastes, feelings, and temper and reveal the kind of company he has been accustomed to keep. There is a kind of conventional manner, a superficial veneer, used by some people on special occasions which is of but little importance, of no practical value, and as transparent as it is worthless. Artificial politeness is an attempt to deceive, an effort to make others believe that we are what we are not; while true politeness is the outward expression of the natural character, the visible signs of the inward person. Thus a beautiful character reflects a beautiful manner.

There is a vast difference between "society customs" and genuine good manners. The former is a bold but vain attempt to imitate a noble virtue, while the latter is the natural expression of a heart filled with honest purposes. True politeness must be born of sincerity. It must be the response of the heart, in other respects it makes no lasting impression, for no amount of "posture" and "outside polish" can be substituted for honesty and truthfulness. The genius of a person may for a time hide many defects, but the natural character cannot long be hidden from view: the real person will sooner or later come to the surface, revealing its defects, natural inclinations, and personal characteristics. Good manners are unfolded through

a spirit imbued with unselfishness, kindness, justice and generosity. A person possessed of these qualities will be found gentle and polite. Good manners are very important factors in our education, and cannot be too strongly emphasized when we realize that they are but the visible expression of inward virtues, and, like the hands of a watch, show us that the inward machinery is perfect and true. A noble and winning daily bearing is the outgrowth of goodness, sincerity and refinement. History is crowded with examples illustrating that in literature it is the delicate, indefinable charm of style, more than thought, that perpetuates the work. We see that often, more than in any other circumstance, it is the behaviour of one towards the other that promotes or obstructs their advancement and success in life.

The address and manner of a person generally determine his success or failure. How often we come in contact with those whose very presence is repulsive: who appear to be entirely void of noble qualities, while on the other hand, we meet with those whose personality is like the pleasant rays of a June sun, warming and gentle. The friendship of a person of genial character is courted and sought, while the one who is cold and gruff is avoided or his presence endured no longer than is positively necessary. We are all creatures of conditions and circumstances and dependent more or less upon each other in all the walks of life. In this day and age, under the brisk competition of patronage in every department of human activity, the expression of the nobler qualities of mind and heart counts much for capital and trade. The person whose heart and life are right will exhibit those winning qualities so universally admired, and will secure the cordial approbation and general good will of friend and stranger.

There is no field of labor where good manners are out of place, no condition of even a depraved nature which is not influenced more or less by the exercise of a kind heart and a genial air. Even the brute recognizes and shows an appreciation of kindness. These qualities of mind and heart, cultivated and woven into the fabric from daily life, will yield a harvest of rich fruitage. The world has an abundance of middle rate workers, but it can never have more than enough of those who have added to native endowment discipline and conscientious training. Probably the best gifts which could be bestowed on most of us in any station or occupation would be what is known as staying power. Many of us begin with enthusiasm, but we give out before the end of the day. To adopt a line of conduct, to choose a special study, or to decide on a course and stick to it, is in each case to deserve success if not always to ensure it. The path of life is strewn with the wrecks of those who begun but did not hold on their way. Pleasing manners constitute one of the golden keys which turn the bolts of the door leading to success and happiness.

The great motive power of our conduct is the heart; it is the fountain head of all action. The heart is the great reservoir from whence flows the issues of life.

When the heart is right the life will be right, and success in all its completeness will be the fruit.

CHEERFULNESS.

By Mrs. J. H. Day, Gorrie.

If we are cheerful and contented, all nature smiles with us, the air seems more balmy, the sky clearer, and the flowers have a more fragrant smell, and everything will appear more beautiful. What God is to the

stricken heart which knows how to lean upon Him, so cheerful persons are in the house and by the wayside.

Cheerfulness—how sweet in infancy, how lovely in youth, how saintly in age. There are a few noble natures whose very presence carries sunshine with them wherever they go, a sunshine which means pity for the poor, sympathy for the suffering, help for the unfortunate, and kindness towards all. How such a face enlivens every other face it meets, and carries into every company vivacity, joy and gladness! We always know the cheerful man by his hearty "Good Morning," as well as "Good Night." Fog, cloud and vapor might as well try to cling to the sun illumined landscape as the blues and moroseness to remain in any countenance when the cheerful one comes with a hearty "Good Morning." Don't forget to say it; say it to your parents, your brothers and sisters, your schoolmates, your teachers, and say it cheerfully and with a smile. It will do you good and do your friends good. There's a kind of inspiration in every "Good Morning" heartily and smilingly spoken that helps to make hope fresher and work brighter. It seems really to make the morning good and to prophesy a good day to come after it. Be liberal and let no morning pass, however dark and gloomy it may be, that you do not help, at least, to brighten it by your smile and cheerful words.

"A merry heart doeth good like medicine." It is the duty of everyone to extract all the happiness and enjoyment he can from without, and also from within himself and, above all, to look on the bright side of things. Never be cast down by misfortunes. If a spider breaks his web over and over again, he does not cease mending it. Let us, then, not fall behind the very insect on our walls. If earth is dark, keep your eye on Heaven. With the presence and promise of God, we can bear up under anything, and should press on and never falter nor fear. Do not let the shadow of discouragement fall on your path. However weary you may be, the promise of God will never cease to shine, like the stars at night, to cheer and strengthen. Learn to wait as well as to labor. The best harvests are the longest in ripening. It is not pleasant to work in the earth plucking the ugly tares and weeds, but it is as necessary as sowing the seed; the harder the task the more need there is of singing. A hopeful spirit will discern the silver lining of the darkest cloud. Far back of all planning and doing, with the attendant discouragements and hindrances, shines the light of Divine promise and help. The times may be hard, but it will make them no easier to wear a gloomy and sad countenance. It is the sunshine and not the cloud that makes the flower. There is always that before or around us which should fill the heart with warmth. The sky is blue ten times while it is dark once. You have troubles it may be, so have others. None are free from them, and perhaps it is as well that none should be. What shall we say by way of commending that sweet cheerfulness by which a good and sensible woman diffuses the oil of gladness in the proper sphere of home? The best specimens of heroism in the world are never gazetted. They play their role in common life, and their reward is not in the admiration of spectators, but in the deep joy of their own conscious thoughts. It is easy for a housewife to make arrangements for an occasional feast, but let me tell you what is greater and better: amid the weariness and cares of life, the troubles, real and imaginary, of a family, the many thoughts and toils which are requisite to make the family home of thrift, order and comfort, the varieties of temper and cross lines of taste and inclination which are to be found in a large household, to maintain a heart full of good nature and a face always bright with cheerfulness, this is a perpetual festivity. I do not mean a mere superficial simper, which has no more character in

it than the flow of a brook, but that exhaustless patience, self-control, kindness and tact which spring from good sense and brave purposes. Affairs assume a gloomy aspect, poverty is hovering about the door, sickness has already entered, days of hardship and nights of watching go slowly by, and now you see the triumph of which I speak, for when the strong man has bowed himself and his brow is knit and creased, you will see how the whole life of the household seems to hang on the frailer form which, with solicitudes of her own, passing, it may be, under the sacred prime sorrow of her sex, has an eye and an ear for everyone but herself, is full of resource—hopeful in extremities, helpful in kind words and affectionate smiles, morning, noon and night, is the medicine, the light, the heart of a whole household. "God bless that bright sunny face!" says many a one, as he or she recalls that one of mother, wife, sister or daughter who has been to them all that my words have described. Let us try to be like the sunshiny member of the family, who has the inestimable art of making all duty seem pleasant, all self-denial and exertion easy, and even disappointment not so blank and crushing; who is like a bracing, crisp, frosty atmosphere throughout the home, without a suspicion of the element that chills and pinches.

I do not know of a more enviable gift than the energy to sway others to good, to diffuse around one an atmosphere of cheerfulness, piety, truthfulness and generosity. It is not a matter of great talent, not entirely a matter of great energy, but rather of earnestness and honesty, and of that quiet, constant energy which is like soft rain penetrating the soil. It is rather a grace than a gift, and we all know where all grace is to be had freely for the asking.

THE DUTIES OF A MOTHER.

By Mrs. R. C. Nodwell, Hillsburg.

The queen that sits upon the throne of home, crowned and sceptered, as none other can ever be, is—Mother. Her enthronement is complete, her reign unrivalled, and the moral issues of her empire are eternal. "Her children rise up and call her blessed."

Rebellious as the subjects of her government may be at times, she rules them with marvellous patience, winning tenderness and undying love.

Scotland, with her well-known reverence for motherhood, insists that, "An ounce of mother is worth more than a pound of clergy." Napoleon cherished a high conception of a mother's power and influence when he said, "The great need of France is mothers."

The mother is a light that shines and reigns alone in the early child life and she may weave into the life of her children thoughts and feelings that are rich, beautiful, grand and noble, which will make all after life brighter, better and sweeter for them, or she may sow the seed of sloth, indifference and godlessness which in after years will produce a harvest of rebellion, bloodshed and ruin.

A mother's duties are manifold, sacred and sublime. Among them may be reckoned also the humbling, the trying and the apparently trifling; but they all require the patience of Job, the skill of the specialist, the heroism of a martyr, the diplomacy of a statesman and the exercise of all the Christian graces. Her influence or training makes or mars, raises or ruins the life of the child, the home and the nation.

We have read history to little purpose, if we have not observed that there are periods when corruption seems to acquire a peculiar and fearful sway in the world. And these sad changes are generally attributed to the

influence of some distinguished leader or leaders in wickedness, who impress their own corrupt image on the generation in which they live. But if we would trace the evils to their true source, we must go farther back than to the men who stand thus prominent in producing them. We must go back to the mothers of those men, whose influence upon them in childhood has been corrupting and vicious. Such, the Holy Scriptures inform us, was the cause of that awful wickedness which brought the waters of the deluge on the earth. It was not till the "Sons of God" took to themselves wives of the daughters of men (an unholy and unhallowed alliance) that the wickedness of man became so great on earth, and the same authority frequently alludes to the mothers of Israel and of Judah's kings, when in days of the nation's decline the throne passed in such rapid succession from one king to another "who did evil in the sight of the Lord."

Now, why is all this so carefully noted? It was to show that the curse of the nation was found in the nurseries of her kings where their infant minds were tainted and poisoned by the Jezebel mothers. But if natural influence is thus powerful for evil it is equally powerful for good when rightly and wisely employed.

The inspired penman sums up a mother's duties in these words, "To love her children, to be discreet, chaste and good."

The poet has said, "Just as the twig is bent, the tree is inclined." But who bends the twig (child)? Who has the mind or character in hand while it is yet so flexible that it can be turned in any direction or formed in any shape? It is the mother. From her own nature and the nature of the child it results that its first impressions must be taken from her, and she has every advantage for discharging her duties. She is always with the child, if she is where mothers ought to be,—sees continually the workings of its faculties; when they need to be restrained, when led and attracted. The mind of the child is like wax to receive but like marble to hold every impression made upon it, be it good or evil. Let us, as mothers, then improve our powers as we ought, being steadfast, immovable, always abounding in the work which God requires at our hands, and for our encouragement let us know that our labor is not in vain in the Lord.

Many mothers think they have no time for the mind and soul culture of their children, but we find time for robes and ruffles, for gossip and social calls.

Mothers, put your children to bed and give them a good-night kiss. Make it a habit to talk to your children in order to get from them an impression of their feelings, and no time is more opportune for this than when putting them to bed. This is a time of all times when a child is inclined to show its confidence and affection. All its little secrets come out with more truth and less restraint at this time than at any other.

Mothers, do no think the time wasted which you spend reviewing the day with your little boy or girl. Do not neglect to teach it how to pray, (and why, and when, and where). Always send the little one to bed happy. The memory of this when in the stormy years which may be in store for the little one will be like the star of Bethlehem to the bewildered shepherds. Therefore take heed that ye despise not one of these little ones; but bring them up in the nurture and admonition of the Lord.

The following lines written by Fanny J. Crosby, beautifully expressed my impression of my own mother:—

"The light, the spell-word of the heart,
Our guiding star in weal or woe,
Our Talisman—our earthly chart,
The sweetest name that earth can know.

We breathed it first with lisping tongue,
When cradled in her arms we lay;
Fond memories round that name are hung
That will not, cannot pass away.

We breathed it then, we breathe it still,
More dear than sister, friend or brother;
The gentle power, the magic thrill,
Awakened at the name of Mother."

WOMANHOOD.

By Mrs. Gray, Acton.

There is a path which leads through secret places with many windings and delays, out of the garden of infancy, through the bright fields and shadowy groves of girlhood, to the heights of a pure and fine and lovable and generous womanhood. It is not time alone with his blind, onward march from year to year, who makes this upward path. All round the world, the daughters of men are driven before him, they may not linger in garden or field or grove. The compulsion is upon them. But not for all does the inevitable pilgrimage follow a rising course. For some it moves upon a level, dull and monotonous, through all its outward changes, and growing more weary as the light of hope, beauty and joy fade along the lengthening road. For others, by a happy destiny, the journey advances from a bright promise to a better fulfillment, from a morning joy to a noon-day splendor, from the places that are sweet and pleasant in their lowliness to the higher ranges of thought and feeling, with an ever clearer, wider outlook upon life, an ever purer, spiritual air to breathe and an ever deepening hope to make the heart peaceful and strong.

But is this difference among the pilgrims of time made by destiny alone or does wisdom also play a part in the finding and following of the way to womanhood? Surely something more than the increase of years, something more than the unconscious maturing of nature, enters into a progress so reasonable, so beautiful, so triumphant. A true woman is something finer and nobler than an old girl.

There must be an inward choosing and discovery of the best things to live for, a wise election of the powers and capabilities to be cherished and nurtured by use, a steady and willing surrender to the finer desires and aspirations and, above all, an upward look to the highest standard that is visible, yes, and beyond that, to an ideal, invisible save to the eyes of the heart.

Childhood and maidenhood have always an attractive beauty of their own. But with maturity you look for something more, and yet, how many countries there are in which you find something less—a womanhood from which the charm of wild youth has vanished without a recompense. It is not woman's problem only, but man's also; and in some way it presses upon him more closely than upon her.

Never yet was a fine womanhood unfolded in a country where the dream and the desire of her fulfillment were not cherished in the heart of man. Whether we like to have it so or not, we cannot escape from this ordinance of nature. It is the method of divine government, thus far, at least, in the history of the world. Woman is the mould and form of plastic life, the guardian of domestic honor and the mistress of social joy, the ultimate rewarder, or rather herself the prize and crown of man's earthly conflicts and toils.

There must be differences of character and attainment among women, even as there are among men. Heaven forbid the advent of a machine-made womanhood, correct, accomplished, invariable and obstinate. Women have not all the same thing to do, the same conditions to work in; and as their particular tasks and surroundings differ, so must they be fairly and wisely equipped and trained for the duties which are opened to them.

To consider the unfolding of true womanhood in its essential character and to ask in what way it may best be obtained, let us see whether we can find the things which confer on woman, in her full development, her special part and power in human life. Thus we may learn, at least, to trace the trend and direction of the path which leads her to the heights. Let us remember the things which she must have in common with man—the great things she must share with him; and for these there is no recipe but the free and wise and joyous exercise of body and mind and heart.

No matter what a woman's rank in the world may be, there is always one place that will be subject to her sway, wise or foolish, competent or confused. That place is the home. There she must set the tone and make the rules and guide the flow of daily life, else all must run haphazard, discordant and astray.

None are fit to rule but those who have first learned to obey; then the girl who is ever worthy of the rulership of a household is best educated in the obedience of a home. Crowd out the discipline and training of a real home from the life of the average girl, and you make it far less likely that she will find or follow the way to womanhood, but if she comes from the purity and joy of a real home, cherishing its traditions, remembering with gratitude its lessons and its pleasures, it will be strange if she does not bring with her the secret of its charm and the power to perpetuate its dominion. Wherever she goes, it will go with her, this gentle sovereignty, won through obedience and self surrender, like a glimmering halo of light, half saintly and half queenly. The fine observances of courtesy will follow her steps and the strength of honest manhood will be ready to protect her from all insult and harm. She may hold her court in a cabin, but none will enter it without feeling the beauty of her sway. Her fire on the hearth may be lit between the roof of stars and the canopy of her rest may be the green boughs of a forest tree, but the comfort of her presence will be the light of the camp, and the kindness of her heart will encircle it with peace. No change of outward circumstances can estrange or bewilder her, no threatening storm or darkness of night can break in upon the sense of security that surrounds her, or hush the quiet voice of confidence that sings at her side. For she carries warmth and radiance, sweet order and kindly rule within her breast, and to be with her is to be at home.

HOME MANAGEMENT.

By Mrs. W. E. Owens, Thornton.

The subject of "Home Management" is a most important one; in fact, I know of none that surpasses it. "Home," the very name itself is dear to every one of us and awakens within us the happiest memories of our lives. It was there that we first learned to love and to feel that there was a bond of fellowship and interchange of thought and affection that keep our hearts mellow and prevent us from becoming self-centred, and having an individuality of our own, we are at the same time human links in the chain of

family life, each dependent upon the other for sympathy in the hour of trouble and of gladness, rejoicing in the happiness of others and sorrowing for their sorrows.

I do not agree with those who consider the home as second in importance to the church, for much as I love the church with its sacred surroundings, I would yet class the home the higher, for the home is the nursery of the church and of the world, and in proportion as our children are trained to obey truth, to be honest in all business dealings, faithful to high ideals, pure in heart and life, reverent and true to the worship of God, so in proportion are they of value to the country, the church and the nation of which we are a part. Have we not heard that the homes of a people are the bulwarks of a nation? A nation of homes, such as we and many others are trying to build up, is the surest guarantee of prosperity, progress and endurance.

And now as to managing a home successfully, here I feel somewhat timorous, and, like one of old, would say, "Who is sufficient for these things?" First methinks that there should be wise ruling in the fear of God with a humble dependence upon Him for right understanding. There should be obedience to lawful authority, firmness combined with tenderness and reason, loyalty to each other, unity of purpose with individual ambitions, for there is diversity of gifts in families as well as in nations.

A boy or girl with an intense desire for education and scholarly attainments would make a poor farmer or mechanic, while one who loved the fields or animals of the farm would be miserable and make a complete failure in an office or store. Young people often find it hard to decide their future course in life, and great care is needed in helping them to make a right choice, and there should be persistent and persevering effort to obtain the best results possible.

Home should be the happiest place on earth, and neither thought nor effort should be spared to make it so. There should be cheerfulness without levity, purity not prudery, economy without parsimony, plenty with no waste, comfort but not extravagance, an honest effort to make the best of our business, not simply for the money or good we get out of it, but that we may glorify God by showing to the world that God helps those who help themselves. We think also that in home life there should be time for intellectual culture. In these times of hurry and rush we need a little time to converse with leaders in realms of thought; a home without books or papers would be to me a gilded prison, no matter how beautiful its other appointments and surroundings might be, but care should be taken that these books and papers are in accord with truth and right and that all others are banished. Be mindful of that which our children read, not by a system of nagging and prying, but by showing an affectionate interest in the welfare and enjoyment, recognizing the fact that the spiritual and intellectual should be nourished as well as the physical nature.

It is a well-known fact that a too close application to business makes it a drudgery, and drudgery narrows the mind, cramps and crushes out of our life all that brightens and gladdens human existence.

These are but a few thoughts as to the successful management of a home, much more might be said by those more highly gifted. The management of a home means more than many people think and requires more gifts and graces than many possess. It needs patience, firmness, tact, unselfishness, unbounded love, fair dealing with the children as with other people, all these are needed, and again I say, "Who is sufficient for these things?"

HOME.

By Miss L. Weber, Kimberly.

There is no word that is so precious, so full of tender memories and so full of affection as "Home." It takes but little to make a home; it requires little to beautify it; but that little lacking, home can exist only in imagination. To make home beautiful, to give it the charm which it ought to possess, to turn the hearts of the young to it with reverence and affection, can any task be more inspiring or deserving of success?

Young beginners in home making pay much attention to outward surroundings when their means will permit, and if their means are not such as to permit of this, they devote their attention to the furnishing and arrangement of the parlor rather than the other rooms in the house, and are more inclined to indulge in extravagance here than elsewhere.

The basis upon which all homes should be founded is good living, and no matter how straightened the circumstances, how little money there is to spend, this can always be secured if the housekeeper will begin at the proper place, and that is in the kitchen. That they do not thus begin is the reason for so little home comfort in many of the homes and so little restfulness and true pleasure.

The getting of a house does not guarantee the possession of a home, but the presence of a good housekeeper and one who "looketh well to the ways of her household" goes a long way toward making home what it should be, for when the physical welfare of a family is properly looked after the mental and spiritual comfort is almost sure to follow.

A cheerful kitchen should be the first requisite, and it is surprising how careless some people are in this matter; they are careful that the rooms in which they are to sit and receive their friends shall be cheerful, clean and comfortable, but the kitchen is a secondary consideration, upon which dusting, cleaning, and tasteful arrangement and decoration would be thrown away. Yet the kitchen should be the most convenient room in the whole house, for is it not in the kitchen that the housekeeper spends a great part of her time, and if it is not kept perfectly clean it is a sure sign that something is radically wrong.

In regard to providing for the home, it should be remembered that in order to be healthy in mind and body we must eat wholesome food and eat it at the proper times. Plain food made wholesome by good cooking is what is required, rather than rich, indigestible food not well cooked. It is just as easy to do anything properly as to do it carelessly, and this should be remembered when preparing the food for the table. It requires art even to cook an egg so that it is neither a lukewarm fluid or a hard, flavorless ball, and so it is with everything about a kitchen. If housekeeping is going to be a success, as it should be with everyone who undertakes it, it requires just the same care and preparation as it does for any other occupation taken up by our girls.

THE BACK-YARD BEAUTIFUL.

By Helen Wells, Syracuse, N.Y.

The corners of Mrs. Willard's pretty mouth drooped discontentedly, and the white forehead was puckered into a frown, as she stood at the kitchen door looking out upon the scene before her. "I'm tired of it all," she muttered.

A soft arm stole around her waist, and a sweet, womanly voice asked cheerily, "Tired of what, little one?"

"Oh, Auntie! I'm so sick of this old yard with its smokehouse and pig-pen and barns, all ugly, ugly! I want to get away from it all and look upon lovely things. I don't mind the work, but I so dislike the same old wretched scenes; it tires me," and the blue eyes filled with tears.

"My dear," said the aunt gently, "the true philosophy of living is to enjoy the things by which we are surrounded, instead of longing for the unattainable."

"Enjoy this!" interrupted Mrs. Willard scornfully, indicating the yard with a sweep of her hand.

"We cannot admire ugliness in any form, so let us make beautiful the things by which we are surrounded, that we may be able to enjoy them. This back-yard can be made an ever-changing scene of beauty."

"By a magician?" queried Mrs. Willard skeptically.

"Nothing so wonderful as that," laughed the aunt, "just a little labor and thought is all that is needed. Let us begin with the pig-pen, we admit that while it is useful it is not an architectural beauty and falls far short of being a 'joy forever.' Let us set a hedge of lilacs three feet in front of it, leaving just space enough to pass through to the trough with the feed. Lilacs grow very rapidly, and in two or three years' time will hide the objectionable building, or at least disguise it. They are a bugless shrub and stand the cold winters, and while they are in bloom are very beautiful and fragrant. Even when through blooming their fine foliage makes a fitting background for the row of golden glow, which we will place just in front of them. Set all these roots in straight rows. The golden glow attains a height of about eight feet. About two feet in front of these set a row of sunflower dahlias, whose yellow blossoms are about four feet from the ground and will reach the base of the golden glow's beautiful bloom. In front of the sunflower dahlias sow a row of low-growing calendules, which will bring the bank of yellow flowers to within a foot of the ground. Can anything be more beautiful to look out upon than such a mass of lovely yellow blossoms, extending from the ground up to eight feet in the air against the ground of lilacs? Isn't that an improvement over the bare wooden building you are now looking upon? Every year this vision of beauty will appear without labor on your part and will delight your eye from July until November."

"I have so little time to work with flowers," began Mrs. Willard.

"That is just why I am recommending these particular plants," briskly interrupted her aunt. "You can certainly find time to set them out, knowing that they will reward you with their beauty every year, asking only freedom from weeds; and if you will not take the time to do that you deserve an ugly scene to look upon."

"Why, I don't believe it would take two hours to do the whole," exclaimed Mrs. Willard with animation, "I'll have John plow up the space, and I can set out the plants myself."

"Just ask him to loosen the soil around the smoke-house at the same time," added her aunt, "sow some morning glory seeds in it, run some strings or wire netting up to the roof of the building and you will soon have it covered with the pinks and blues and purples of the morning glories. Every day their sweet faces will greet you, and they will need no invitation to appear next season. Year after year they will nod you a cheery good morning, and you will grow to like them like old friends."

"How beautiful that seems, Auntie," said Mrs. Willard musingly.

"You see, dear," added the aunt, "God gave us a triune nature; we have the three parts in one,—our physical, mental and spiritual; and we can never become perfect men and women until we equally develop all these sides of our nature. We develop the physical by food and exercise; our minds by intellectual food, and by using our minds; and our spiritual natures by all things that lift us above the gross into the realm of beauty, —near to God by being near to the work of His hands. All our love for the beautiful is a God-given attribute,—a reaching upward of spiritual hands, longing to be filled with God's truth and beauty. We are only happy when all sides of our nature are being developed and it is just as disastrous to starve our spirits as it is to starve our bodies. In either case it means death, and so," she continued laughingly, "when we sow grain, let us also sow flower seeds: when we plant potatoes let us plant flowers as well, remembering that 'man does not live by bread alone.'"

"I never thought of the cultivation of beauty as a duty," said Mrs. Willard, "and I certainly never thought of flowers as 'spiritual food.'"

"It is only one little thing in the great plan of spiritual development, but it is one of the helps we can all have, and the best way is to use our surroundings for our own development. We may never be able to travel through the world and gather up its beauties in our memories, but we can all surround ourselves with lovely flower scenes that will give us pleasure all our days."

"What else would you suggest, Auntie?" asked Mrs. Willard with enthusiasm.

"Well," responded her aunt, "one of the necessary but objectionable features of our back-yards is the ever-present garbage receptacle."

"True," laughed Mrs. Willard, "you may scrub, you may cover the pail as you will, but the scent of the garbage will cling around it still."

"An excellent reason for stationing it away from the house, but even this homely necessity gives an excuse for making the prettiest little summer house imaginable. Set the garbage barrel beside the barn and build a fence, higher than the barrel, in front of and on one side of it; plant morning glory seeds, and run strings from this fence to the side of the barn making a bower of bloom. Leave just enough space in front to make a doorway for you to enter, and train the vines the shape you wish. Wild clematis, honeysuckle, or any thick-growing vine will be pretty for this place."

"Why auntie, there are lots of places where one could improve the effect by flowers," exclaimed Mrs. Willard.

"In fact," said the aunt, "we can just follow dear old Mother Nature's example and cover all the old and ugly things with a decoration of bloom. It is always a source of wonder to me why so many farm homes are devoid of flowers, with plenty of space; material for enriching the soil; always some man around; implements to do the work quickly,—in fact everything that is desirable for flower culture, and yet we see bare, unattractive places, and if we look into the faces of the occupants of these homes we will miss a certain spiritual development."

"Don't you think the reason of this is because of lack of time?" asked Mrs Willard.

"I know one thing," answered auntie, "that if the number of minutes that people spend telling how busy they are, and how little time they have, were spent in actual labor with their flowers the whole country would 'blossom like the rose' and we would all be happier."

WOMAN'S SHARE IN THE FAMILY INCOME.

Mrs. W. G. Strong, Gorrie.

True economy in the household consists, not so much in that parsimonious exactness, which is the practice of so many women, as it does in the intelligent care and preparation of material, and the perfect adaptation of such material to the individual needs of the family. The subject of economy is very broad, and capable of much expansion, and also many perversions; but we are now in the broad tide of feminine erudition and must bring the collegiate training of the present to bear with force upon all questions of vital importance to society and the home. Some one has said, however, that "Education may work wonders as well in warping the genius of individuals, as in seconding it," and we must admit that this is emphatically true, especially in the case of those women whom a so-called "broad culture" has unfitted for the thorough administration of home duties. Many a young housekeeper, as well as she who is no longer young, feels that it is a hard fate which has consigned her to the monotonous routine of housework, when, by the cultivation and exercise of certain real or imaginary talents, she could shine in the world of art or literature. The point of view is wrong, that is all. The artistic instinct, the deft hand and light touch should the more readily make of home a delightful abiding place. There is nothing in housekeeping which may not be improved by the application of artistic principles, and to acquire the technique of any profession means drudgery of a patient toiling kind. The principles of chemistry, which were mastered in school days, will never come amiss in the home, when the cap and gown of the loved Alma Mater have given place to the housekeeper's apron. Fair girlhood never realizes the "why" of these problems of school life. It is only in the aftertime—when the sweet home duties have come to fill the early years of a happy married life—that a feeling of satisfaction will be the reward of tasks well done; and the discipline of early years should be such as will furnish ample equipment for the solution of problems which confront the housekeeper. No one thing can contribute to the complete felicity of family life in as great a degree as a thorough knowledge and application of the principles involved in the preparation of a successful dinner. Lack of this knowledge is the rock which is responsible for the shipwreck of many a home in this fair land, and no apology is needed for pressing the urgency of this branch of knowledge. Happily the opportunities for acquiring skill and economy in culinary art are more numerous than they were when our grandmothers were young housewives. The cooking schools and household journals faithfully cater to this end. We are rapidly coming to the proper analysis of food products, so that each individual may obtain from the family menu the exact elements needed to renew the store of vital force which has been depleted by his occupation. More and more will the laboring classes come to realize and practice this, and the higher life of the home, be that home rich or poor, be conserved and fostered as never before. In every household there is a place for the veriest crumbs, and no waste should be allowed, even where the counting of pence is not a daily necessity. No housekeeper can feel complete satisfaction in her work unless this matter receives her vigilant care. The secret of poverty in nine cases out of ten is extravagance in the kitchen. This applies, of course, to such cases only where dissolute habits and drunkenness have not wrecked the home. I am speaking of people in humble circumstances who imagine they are thrifty, who apparently have no extravagant habits and yet fail miserably to make any progress in extracting themselves from the slough

of debt. They run bills at the grocer's and at the butcher's, and buy furniture on the instalment plan. There may be circumstances under which it is wise to buy furniture or anything else on the instalment plan, but I doubt it very much. The "instalment plan" has done more to keep people poor than the proverbial mortgage on the homestead. If our means do not suit our ends, we should pursue those ends which suit our means. Many people are ruined not by what they really want, but by what they think they want. Therefore, they should never go abroad in search of their wants; if they be real wants, they will come home in search of them, for, if they buy what they do not want, they will soon want what they cannot buy. A penny is a very small matter, yet the comfort of thousands of families depends on the proper saving and spending of pennies. If a person allows the little pennies, the result of hard work, to slip out of their fingers, they will find that life is raised little above animal drudgery. On the other hand, if they take care of the pennies, putting some weekly into benefit societies, an insurance fund, or into a savings bank and the rest carefully laid out with a view to the comfortable maintenance and education of the family, they will soon find that attention to small matters has abundantly repaid them. There is an old saying that a "woman can throw out with a spoon faster than a man can throw in with a shovel," and no one will deny that this is not sometimes verified. Perhaps the various model kitchen keepers will consider themselves beyond advice, and that already there is no spot or place with them where closer economy could be practised. In cooking meats, for example, do you sometimes throw out the water without letting it cool to take off the fat, or were you ever known to scrape the dripping pan into the swill pail? Because, if you have, closest economy cannot be said of you. There is room for improvement. This grease, if sweet, as it usually is, is useful in many ways and should always be saved. Housekeepers careless in this respect often throw out bits of meat that would make good hash, or bones with meat still adhering, and pieces of fish that could be worked in with left-overs. And can a woman be found who ever throws out vegetables that would warm over nicely? I know of housekeepers who pride themselves on saving ways, but, nevertheless, use nice knives in the kitchen, silver spoons to scrape kettles and forks to toast bread, and will sometimes even take a table napkin for a dish cloth, thinking that they will use it that way just once, but it goes the way of all dish cloths. Every housekeeper must draw the line about her own economies, even if the world stands in judgment on her acts, for every house has its own peculiar needs, and there is a Mrs. Grundy for every corner of the street. But there is a so-called economy that wasteth, and a true economy which profiteth much to the ways and means committee, as well as to all concerned. Indeed, it requires all the engineering of this same ways and means committee to decide sometimes what is best to do. It certainly is not economy in every case to "make over" old garments, and there are women to-day who work from January to December ripping up, sponging, pressing and making over worthless garments. Their life's energy has been wholly misspent, because they could not discriminate between what was good and what was valueless. The woman who boasted that the lining in her black silk waist was made of twenty-three pieces of as many different colors thought that she was economical, but no one agreed with her on the subject. "Will it pay?" should be the first question asked when looking over the old clothes with a view to making them over. Few husbands realize how mean it makes a wife feel to be obliged to ask for money, particularly when she realizes that her better half is utterly blind to the need which prompts her to become a suppliant. A weekly allowance is a good plan, and economy would likely be the outgrowth

of such a plan, for, knowing that so much could she have and no more, the wife would prove her own cleverness by little saving devices that would make the money go much farther than when she gets it in small amounts as she asks for it. Keeping an account book is a practice which develops habits of thrift and economy. The following are a few of the ideas advanced in the topic "Women and Money." "Men are apt to forget what extraordinary changes women have undergone in this century—in the last half particularly. She may have a been a financial simpleton in the remote past; she surely is not now in most cases. To-day the average woman understands money as well as the average man." "Man gets his knowledge of practical affairs from constant experience, and wonders that woman does not get hers without experience. When he tries to teach her something about money, its value, its relations, its purchasing power, he finds her quick to learn, and his small exertion in her behalf amply recompensed. Who has known a woman that, having had any sort of financial education, has not profited by it?" "She is, notwithstanding contrary belief, an intelligent economist when she comes to know what economy means. It is frequently said by the other sex that she can make a dollar go as far as he can make two go." "Man, not woman, is the great spendthrift; always has been; always will be. He has dissipated millions where she has dissipated thousands. Squandering is so common with him as to invite little notice: so uncommon with her as to arouse general attention. Her expenditures are, as a rule, on small things." It is to be doubted if, out of a thousand business failures a wife actively and knowingly contributes to one. The plain truth is, if she has any common sense, and is the least enlightened, she usually restrains her husband's tendency to lavishness, and employs all her influence in the direction of economy. Economy is generalship in little things. We know men who live better on a thousand a year than others upon five thousand. There are day laborers who go home to more real comfort of neatness, arrangement and prosperity, in their little snug room, than is found in the lordly dwellings of many millionaires. And blessings be on their good angel of economy, who wastes nothing, and yet is not sordid in saving; who lavishes nothing, and is not parsimonious in giving; who spreads out a little with the blessings of taste upon it, which, if it does not multiply the provision, more than makes up for it in the pleasure given.

Let no man despise economy.

COST OF LIVING, AND WASTE THROUGH INJUDICIOUS BUYING.

By L. Duncan, Emery.

Household economics have been defined as "The relation between the efforts and the satisfaction of the household." Thus we may conclude that household economics means a thorough understanding of good housekeeping and true home-making, and putting into practice this science means comfort and all that goes to make a well regulated home.

As Charles Kingsley expresses it, "The secret of thrift is knowledge; knowledge of sanitary laws saves health and life." It is not only a science, but an art. It embraces the science in the construction of the house, the lighting, heating, ventilation, and includes fresh air, pure water, and the cooking of wholesome and nutritious food. It means also the purchasing of supplies, the making and mending and remodelling, as well as the proper care of clothing, and a careful oversight of each room in the house. It

includes the furnishings, and the proper expenditure of the income. Then, too, knowledge is required of taste and beauty, and the ability to apply that knowledge that our homes, though simple, may have comfort with beauty and harmony throughout. This does not mean a velvet carpet and other costly furnishings for the drawing room, and dilapidated cooking utensils for the kitchen, and it certainly does not mean an overloaded dinner table for the occasional guest, with very limited rations for the family.

Every home-maker should have a pride in knowing how her house is taken care of, even to the minutest detail. Everything should not be left to the maid. What do maids care whether they pay twenty or thirty cents a pound for meat? Their purse is not affected. The ignorant mistress who despises household knowledge and triumphantly boasts, "When I am paying Bridget to do the work I am not going to do it for her," and considers it part of Bridget's duty to do the marketing, may some day realize her mistake.

A capable housewife can sometimes arrange her larder for a week ahead, and avoid daily marketing, thus saving the time that a daily visit would mean to be applied in some other direction. There is, however, another side to this question. In making daily or frequent visits to the stores and markets you can often save ever so much, and be able to set a better table, for in looking about you see things that you had not realized were as yet in the market, or you run across something that a store is making a special sale of on that particular day. This, of course, applies more to the larger towns where there is much competition.

A friend of mine, whom I sometimes visit, has a home in which harmony reigns from cellar to attic. Through judicious planning she accomplishes more than anyone I know. In that home everything is done systematically. By keeping a housekeeping book she knows just what portion of the housekeeping funds is spent on each article; she knows how much it will cost to provide a meal for half a dozen or for fifty persons. Each cent she so expends that the most value can be gotten for it. This, as I said, is due to her previous planning. Although she has a telephone, it is seldom used in purchasing, for she fully realizes the necessity for seeing goods before purchasing. Cash is one of her mottos, and it is certainly an excellent one.

The theory that plain living includes "High thinking" may be entirely correct, but little of it is seen in actual practice, Of all the organs of the body, there is, perhaps, none so badly used or mistreated as the stomach. Irritability, general discomfort and ill-temper are frequently the result of poorly chosen food.

There is an old saying, "a fat kitchen makes a lean will." Buy nourishing food. Eggs are sometimes expensive, but even then are perhaps are not as expensive as would be the same amount of nourishment in meat. When poached or boiled they are distinctly a nourishing diet. Rice may take the place of potatoes, and it is not nearly so expensive, although potatoes are indeed a cheap food. To make rice absolutely nutritious you must boil it until the grains are entirely separated, so that they toss together lightly. Other cheap foods are dried vegetables and fruits. Take for instance prunes, nothing in the line of fruits is nicer than a prune or can be used in more ways or will prove more acceptable as a steady diet. It is well known to be a valuable nutrient. Many people are prejudiced against prunes because they have eaten them under adverse circumstances. When selecting this fruit, take one of the prunes and if pulling and flattening it leaves the skin smooth and shiny, you have a good article; but if they are so hard that nothing short of a sledge hammer would smooth out the creases, and the

surface be broken or marred with fine lines running in every direction, don't purchase them.

It is said that French cooks are the most economical. They know how to prepare the most appetizing results from what we would throw away.

A careful cook seldom buys lard; she saves the trimmings from all meats and the drippings from roasts, except lamb or mutton (which is strong). The trimmings from the meat, she chops and cooks over a slow fire, and re-cooks the drippings till all the moist juice of the meat has evaporated. She then puts this fat away in stone jars for frying fritters, croquettes, fish, and making soup. Yes, the French cook makes what is said to be a delicious soup from these fats. She sometimes has three jars, and into one puts fat for frying fritters and croquettes, another is used for the fat she uses for fish, and a third one for soup. The fat remaining after frying may be clarified and used many times.

Some people mistakenly think soup is an expensive luxury. However, a tempting and nourishing soup can be made from the cheapest materials, including remnants of food that could not otherwise be used. Economy means not merely saving but management, and good economy includes wise spending and using. It is just as wasteful to cook meat too tough to be chewed or digested, as it is to throw away what might be used; thus it is as prudent to purchase vegetables and seasonings to aid in making an appetizing soup or stew out of materials otherwise useless as it is to refrain from buying an article not needed.

Sufficient cooking is required—slow, steady simmering, stewing and roasting. Parboil a piece of meat before you roast it and note the difference; then, too, the water in which the meat has been parboiled may be served for soup for the next day's dinner. Thus, also, water saved from boiling vegetables, with, perhaps, the addition of left over vegetables and seasoning, and fat, makes an excellent soup.

Two articles that it is never advisable to purchase from the butcher are hamburg steak and corned beef. Why? Because the former is never good after it has been chopped for any length of time. Even if the meat used is good it cannot be kept long from decomposing. But unfortunately meat is used for this purpose that can be disposed of in no other way, since it is at least slightly tainted, if not decomposed. That which goes into the brine to make corn beef may not be injurious to the health, but who wants to eat tainted meat, and besides pay perhaps as much as, if not more than, for a cheap cut of meat which could be corned at home; and as for hamburg steak, all kinds of otherwise unseasonable scraps go into it. A powder which gives to it that bright red color is mixed with it. If corned meat be desired, purchase an aitch bone, have the butcher cut it in two, and part of it may be corned and the remainder can be put through the chopping machine; thus you will get hamburg steak that is fresh, juicy and nutritious.

We don't realize what we can do with cheap meat until we mix our brains into its preparation as well as pepper, salt and other seasoning.

Since less than one-fourth of the weight of a dressed beef consists of very tender meat, those parts are expensive, and the less tender pieces being more nutritious are therefore more economical. Prime ribs, however, are more expensive than they seem, for the purchaser pays for so much bone. A cheap piece with much refuse may be as expensive as a higher priced cut. Veal is never economical, since it is poor in both flavor and nutritive value, besides being expensive. Beef is the most nutritious of meats, and

mutton comes next. The tongue, liver, kidneys and heart, as well as some other organs of the ox and sheep are used for food. These are inexpensive food, but are very indigestible.

Sausages are not more economical than other meats. Frequently various vegetable substances are mixed with the meat. Someone has remarked that they resemble life, for you never know what is in them until you have been through them.

In purchasing fish we find that the market price is not an indication of the true economic value. There are fishes with practically the same nutritive value, and one of these varieties may command perhaps four or five times the price that another does. Now we must not for a moment think that none of the high priced fish are worth the price. Take, for example, salmon which contains almost three times the nutritive value as the same weight of cod; thus a pound of the former at thirty cents might not be dearer than a pound of the latter at ten cents. Herring, it is said, offers the largest amount of nutriment of any animal food, for a given sum.

The nutritive value of oysters is not high. It would take fourteen of them to be equal to an egg. At the recent Institute Convention at Guelph, Mrs. Laws in comparing the food value of oysters and milk mentioned the fact that a quart of oysters had practically the same nutritive value that a quart of milk contained, and remarked that since oysters are sold for 40 cents a quart and milk for five cents a quart, you are paying 35 cents to tickle your palate.

We are in danger of eating too much rather than too little meat. Three times a day is perhaps more than anyone requires, and is possibly harmful, except to people actively working or exercising. Some one has said, "We live not upon what we eat, but upon what we digest." No matter how much is swallowed, only a certain amount is made use of; hence the system is over-taxed in getting rid of the surplus. Therefore see that your meat bill is not out of proportion to other household expenses.

Excepting bananas, fresh fruits have little food value. There are, however, in them elements essential to pure blood and tissues.

When choosing vegetables in the market, it is best to purchase those that are in season, since those forced in hot beds or brought from a distance are seldom, if ever, equal to those grown in the gardens, besides being too expensive for most purses. If we know the price of vegetables when abundant, we will not be tempted to pay several times that price out of season. Vegetables of medium size should be chosen, for large ones are less nutritive and require more fuel to cook.

In purchasing flour it is always advisable to secure the high grade patent flour. It is the most nutritious. Those cereals sold in packages have been partly steam cooked in the factory. Yes, you say, it takes less time to prepare them for the table, but have you stopped to think that you are paying for a large quantity of water, and doubtless you will require a fire for other purposes, hence it is more economical to purchase them uncooked, and, too, cereals that have not been partially cooked in the factory will be found to have a better flavor. Oat meal and corn meal contain more fat than other grains, thus are good winter foods.

Now, I would urge all women to keep an account-book, setting down each item purchased and the cost. Yes, perhaps it will take a little time, but how much time have you wasted puzzling your brains to know what has become of that money? Another advantage is that you will know just how much your expenditures are for each week or month. Then, too, when

one realizes that expenditure is too great, it will cause hesitation over the purchase of all articles which are not really necessary to the purchaser. Many women purchase what they deem bargains, and stow them away in closets, and perhaps never find a use for them. If the price of these purchases were set down in black and white so that the victims of these bargain sales could see how much money has been thus wasted, I feel sure that a cure would be effected, for actual figures do look appalling when compared to the stock on hand.

HOW TO SAVE TIME.

By Mrs. Jos. Hudspeth, Caledonia.

The too prevalent impression, that the life of a farmer's wife is one of unmitigated drudgery, is altogether a mistaken idea, insomuch as it lies within the power of every woman to lessen the hours of daily toil and to find time for some more congenial employment, study or recreation. As a first step towards saving time I strongly recommend a weekly timetable, setting apart certain days and hours for each particular household duty, based on the needs and requirements of each individual home. Nothing is a greater waste of time than to undertake household work haphazard or just when the spirit moves, as it throws the whole week's work into confusion, and we find ourselves in a sea of worries and difficulties out of which we are not extricated at the end of the week, and, consequently, we start the next week behind. If this system is allowed to continue, the life of that woman is worse than slavery. It is not necessary that I should particularize or go into detail to prove my statement, as you are all housekeepers, and I am sure that you will readily admit the truth of my contention.

My next point towards the saving of time is the proper division of labor. If there is more than one member in a household, that division should be based upon the ability, the likes and dislikes of the different members of the family. Certain work is more congenial to one person than to another, and this should be taken into account in the division of our household duties, as the work would be better and more quickly accomplished.

In families where there are children, they should have certain work appointed them. There are numerous little things about a house which a child can do as well as, or better than, the mother, and besides saving that mother's time, it is helping to give the child the necessary training in the care and management of a household.

To introduce my next point towards saving time to you, I will quote upon the old, well worn, though very applicable saying—"A place for everything and everything in its place." I am convinced that more time is wasted through a neglect of this wise rule than through any other cause. If we would train ourselves in the performance of our daily work, to carry out this principle, by having a convenient place for everything and returning things to their proper places after use, by training our children to have places for everything and to keep them there, by keeping our husband's apparel, etc., in a proper place, so that he can help himself without calling his wife to his assistance, and by our example and precept encouraging them in habits of order, we could save ourselves hours of labor and worry every week.

Now, I have just given a few general rules on the subject of time saving, leaving the details to be filled in by each one as you find they apply

to your individual experiences, and I am convinced that if these rules are carried out, no farmer's wife need have cause to complain of her position, her household would be governed in a systematic manner, her children would be trained in habits of order and industry, her husband would be contented and happy, and she would have time at her disposal to cultivate the higher qualities of the mind and heart which go so far towards adorning the character of our sex, and home would be what our Creator intended it—An Eden —A Paradise on Earth.

PHYSICAL CULTURE.

By Miss Hotson, Park Hill.

Physical development is a subject that has hitherto received very little attention. We have been ready to see the necessity of training the mind, but have left the body to care for itself, or if we have attempted to train it, we have done so with such indefinite ideas of what physical culture really is, that we have accomplished very little.

Most systems of physical training are incomplete in that they aim at muscular development only. Health should be the first aim; and the second, beauty, is included in the first, for beauty and health are inseparable. What produces one produces the other. Out-door sports, weights, clubs, dumb-bells, etc., are good in their place, but they are one-sided—they develop muscle, but strength of muscle is not always accompanied with health. The exercises indicated above do not proportionately increase the ability of the vital organs to supply the nourishment that is required to keep up those muscles.

The modern idea of physical development is to work the vital organs, to so strengthen and develop them first that they may be able to supply all the nourishment the body may demand. The first step towards this is accomplished by securing their proper position. Until this is done any exercise is likely to prove more harmful than good. When the chest is allowed to sink down the lungs are compressed and prevented from filling with air to their full capacity. Not only this, they press on the stomach and it in turn presses on the other organs near it, and so on, until all the organs in the body are forced down below their normal position and crowded together so that they have not room to do their work properly. Speaking of this, Dr. Emerson, Principal of the Emerson College of Oratory, Boston, says, "There is no physical defect so common as this—that the vital organs are from one to four inches too low among adults and among children down to five or six years of age. Before that age the vital organs are high."

We must, therefore, first of all, learn to stand correctly, that is with the weight poised lightly forward on to the balls of the feet, the chest high and well forward, and the head erect. At all times, whether standing or walking the weight should be on the balls of the feet. This position seems tiring at first, but once accustomed to it one can stand or walk much longer without fatigue.

With the vital organs in their normal position we should proceed to develop them by exercising the muscles that surround them. We must also establish such a relationship between the muscles of the vital organs and the muscles of the limbs, and also of the nerves that supply each, that while we are using one set of muscles and thus wasting energy we are at the same time stimulating the muscles which supply the nourishment to replace the energy that is being wasted.

Another important point is to secure perfect freedom of every joint and muscle that there may be no unnecessary friction, no waste of energy through using more muscles or more force than is actually required to accomplish what we wish.

Some people seem to walk with their hands as well as with their feet. They hold themselves on a chair instead of allowing the chair to hold them. They need to learn relaxation.

Again, nearly all the muscles act in groups and the different groups bear a certain relationship to each other. The muscles of the arm and neck, for instance, are so related that if you raise your arm the head is drawn to it. If you prevent the head moving you are using that much unnecessary energy. By doing away with friction and all this unnecessary waste of energy we gain greatly in endurance.

Many persons think that their daily work, housework, for example, gives them all the exercise they require and perhaps it would, if it exercised the whole body evenly, but it does not do this. Ten or fifteen minutes twice a day devoted persistently and intelligently to all-round physical culture, would, in a short time, make a surprising difference in their ability to do housework easily. It would give strength and endurance, for it would be refreshing no matter how tired one might be with other work, because it would exercise the unused muscles, relieve the tired ones, and equalize the circulation.

The system of physical culture that fills the requirements of every day life needs no special apparatus, only that the clothing must be loose and free. It consists of just a few carefully managed exercises, so planned that every part of the body, every organ, muscle and joint may receive its share of exercise daily. But these exercises must be repeated every day as regularly as you take your meals, for they are as necessary as food, and you cannot in a few years store up health for a life-time, any more than you could, in the same time, take sufficient food to last a life-time.

BEAUTY.

Being a report of an address given by Miss Braden, of the London Dermatological Institute, before the Ailsa Craig Women's Institute, April 14, 1905.

Opinions differ widely as to what constitutes beauty; there are so many types that no hard and fast rule can be laid down, by which to judge it. Every normal woman desires this gift of beauty, but it is given to but few. No woman is so beautiful that she can afford to neglect all aids, such as exquisite cleanliness, good grooming and becoming dress; no woman is so plain that she may not be improved by attention to these matters. A good figure and graceful carriage of the body go a long way to atone for lack of a pretty face. Habitual deep breathing along with daily practice and suitable gymnastic movements will help any figure.

The first requisite of beauty is health. To insure a good complexion the blood must be pure and the organs performing their various functions properly. Great stress must be laid on the daily bath, a sponge with tepid water and soap every morning and a hot tub bath once a week, at night, being excellent. Sleep in a well ventilated room, eat wholesome food, breathe deeply. The majority of women breathe with their chests only, instead of using the muscles of the diaphragm, as nature intended.

Cold soft water is best for bathing the face. Soap should not be used too freely. If one has been exposed to dust of any kind, the face should be cleaned with warm water and soap, well rinsed off with cold water. Let it be remembered, however, that the continued use of hot water and soap on the face will certainly result in a growth of superfluous hair, through time. The majority of so-called toilet soaps are objectionable. Imported white castile is always pure; if it be found too drying for certain skins, a brand called "4711" is recommended.

Wrinkles are a great foe to beauty, but if taken in time may be prevented. Massage with some good skin food is helpful, if intelligently administered. Wrinkles are caused by sleeping on too soft and too large pillows, and in positions that crease the face, by grimacing, by careless drying of the face after bathing, by mental or physical distress, and by worry. Facial blemishes, freckles, moles, liver spots, etc., may require treatment at the hands of a skilled dermatologist, but there are few cases which cannot be helped.

The hair, woman's "crown of glory," must also receive its due. It should be washed once a month or every six weeks at least. An excellent shampoo is made by dissolving castile soap in water until it is like honey. Mix two tablespoons of this with a beaten egg, have the hair wet, rub the mixture well into the scalp, rinse until the last water is clean, and dry it in the sun, if possible. The egg, if used with hard water, softens it, and is good for the hair anyway. Lemon juice in the final rinsing will keep fair hair from becoming dark. If gray or white hair is inclined to be yellowish, a final rinsing with water slightly blued with laundry blue will prevent it. The continued use of borax or ammonia will tend to turn the hair gray. A little vaseline rubbed into the scalp the night before washing the hair, is beneficial, if it be very dry, or if one has dandruff. The hair should be brushed regularly, but so that the bristles of the brush do not touch the scalp. A comb with coarse smooth teeth should be used; comb and brush must be kept very clean.

Cleanliness is also the chief point in caring for the teeth. They should be brushed several times daily, but especially at night. A dentifrice of approved manufacture should be used. One should pay a visit to the dentist every three months.

The thin woman who wishes to gain weight should rest as much as possible, ten hours in bed each night, and a nap of half an hour in the afternoon, is none too much. Take plenty of milk and raw eggs, breathe deeply. If practicable, a course of massage of the whole body will help. The woman who wishes to diminish her flesh should take plenty of exercise, eat a light breakfast, chiefly of fruit, avoiding butter, cream, and all flesh-producing foods, and sleep only seven hours.

HOME SCIENCE AND THE SCHOOL CURRICULUM.

By Mary C. Macpherson, Hamilton.

Among many objections which have been made in regard to the introduction of Home Science and its companion subject, Manual Training, into the common school curriculum, is the one referring to the isolation of the subject. Those who object to it on this ground claim that it should be learned at home, and that there is no connection between subjects ordinarily taught and "Cooking," for those who do object usually understand Domes-

tic Science to mean just that. The first part of this argument may be all right if facts only supported it. The home may be the place to learn it, and the mothers the very best teachers, but one has only to teach Domestic Science for a month or two to find out how few do learn the subject at home. The reasons are many and logical. In the first place, most of the housekeeping is done during the hours when the children are at school and they have few opportunities to get any training in the different branches of homemaking. Again, in many families, time is at a premium. Mothers have too much to do to take time to teach the children how to do things. They can do it so much quicker themselves that they find it economizes time. If the idea of these objectors is to separate the home and the school they are going at it in the right way, and it remains for teachers of Domestic Science to remove from the minds of the pupils primarily—secondarily from the minds of the parents—the idea of the purely utilitarian value of Domestic Science, and obtain for it its true place in the curriculum, and have it become like the other subjects, a culture subject—not a bread-winning art.

After placing Home Science on the same basis as other culture subjects it remains to show how closely connected these really are or may be.

We find in the different grades of the public schools and high schools or collegiate institutes in which Domestic Science is usually taught, arithmetic, grammar, reading, spelling, history, geography, literature, physiology and, later, chemistry, physical science, biology, French, Latin, etc.

Beginning with the first of these, Arithmetic. In a laboratory where individual work is the order we have recipes which must be divided to suit the equipment. A full recipe is given and each pupil is required to make one-eighth of it. When quantities such as $3\frac{1}{2}$ teaspoons, $2\frac{1}{4}$ cups, etc., are called for we have at once several questions in mental arithmetic, and as the easiest way to measure parts of a cup is to use a tablespoon (16 to a cup) we have still another problem. Again we find practical use made of the tables of measurement which have previously been learned by heart and used to solve problems from text books. Here these tables of measurement are not dictated to the pupil, but are discovered by actual experiment by each pupil. These are examples of questions which are constantly coming up in a way which is practical and therefore far more important to any child than when they are merely concerned with a question of dividing so many apples between John and Mary on the blackboard. It accomplishes one of the aims of arithmetic particularly well by teaching accuracy, for accuracy is an absolute necessity in cooking, and a lack of it brings never-failing bad results, an observance of it, complete success.

The value of Domestic Science as a help to Arithmetic and of Arithmetic as an aid to Domestic Science is obvious when we come to consider marketing and cost of materials, which is one branch of the subject.

When we think of such subjects as Reading, Spelling, Dictation, English Grammar, we find that we have in our class in Domestic Science an indirect but none the less important co-relation. New words are added to the vocabulary when the child is at a particularly susceptible age and very observant. These words are not isolated, but are used in their proper connection and hence are more impressive.

Perhaps where we find the closest bond with other school studies is when we come to consider the special sciences. In the public school we have Physiology, Temperance and Hygiene. At present the pupils learn it from text books as any other subject. With the introduction of Domestic Science we find Physiology made more intimate to the child. It becomes a personal question—How food is to supply the elements required for building up the

body. The child is taught to regard the body from the standpoint of a machine which has various parts from each of which certain work is demanded and which receive the energy necessary for this work from food and air. There is no longer the same chance of pupils learning by rote the names of "the bones of the lower extremities" and not knowing where they were at when asked to name "the bones of the legs," as has actually occurred. Domestic Science provides a purpose in learning these things and makes the object not to learn enough tests to pass an examination, but to become familiar with the body and its requirements with the purpose of providing proper food properly prepared.

Other science subjects, Chemistry, Biology, Botany, Physical Science, etc., can both help and receive help from the class work in Domestic Science. With the work of beginning classes in Domestic Science in the public schools many points bearing on these subjects are introduced unobtrusively, and their value is determined later on when the course in these subjects is begun. With older classes the facts dealt with in the chemical and physical laboratory are utilized in the processes involving chemical changes which are so numerous in the Domestic Science laboratory. For example, we have the question of temperature. With small children the first lesson in which the thermometer is used is usually very interesting, and there is excellent opportunity to explain very simply its construction and to give practice in its use while introducing at the same time a little philology which impresses the use of the instrument on the child—the work being derived from the Greek thermos, heat; metron, a measure. Then we have also the consideration of water chemically—its purity or impurity and consequent necessary treatment considered and discussed in terms which are not so technical. Physiologically we consider water as a source of disease, and from this deduce the care of water and of its source to prevent infection.

Again, in considering the many changes which take place under the influence of combination of heat in the processes of cooking and other house work, we have our connection with Chemistry. For example, we have to study the preparation of soda and cream of tartar; the action of these in the presence of moisture; the effect of heat on baking powder; the growth of yeasts; the formation of gas in all these processes, and the other resulting chemical elements or combinations. In fact at every turn we meet with some physical or chemical changes under the processes which either recall something already learned or gives new knowledge which is of use in the chemical laboratory.

Biology and Botany have an obvious connection with Home Science. Before we can understand the proper treatment of foods derived from the animal or vegetable kingdom we must first know their composition and construction. In studying the composition and construction of foods of the animal kingdom we find our connection with Biology; with Botany, in studying the foods of the vegetable kingdom from the same standpoints. And here also we have a close relationship shown between Biology and Botany, or animal or vegetable growth, introducing the interesting question of Nature's Food Cycle and the theory of the Conservation of Energy. How vegetable life, making use of chemical elements and substances which are of no use to animal growth, prepared food in a form which can be used by the animal kingdom, and how in the life process the animal breaks up the more complex material into the simple elements for the use of the plant again. The study of germ life can also be introduced in considering the work of bacteria in decomposing animal waste to prepare it for consumption by plants.

With Geography and History we are closely connected in studying the source of different foods—their introduction into different countries as articles

of commerce and mediums of exchanges. In connection with the transportation and production of these foods may be studied various manufacturing industries; the preparation of canned goods, meats, vegetables, etc.; certain patent foods, Force; Shredded Wheat, and its delightfully clean preparation in the Oread building at Niagara Falls, N.Y.; fruits, dried or canned; flours; baking powders, etc., and the adulterants frequently used and to be avoided. All this making both subjects of more vital interest, and therefore more easily comprehended by the pupil.

Even Literature, French and Latin, which would seem to be most distant from our subject, are readily and unobtrusively introduced. First a few words are taught to smaller children before the class has studied foreign languages. French is used very often on elaborate menus, and many words are used even in plain cooking. We have a free use of such words as menu, rechauffée, purée, entreé, consomme, bouillon, fricassee, etc., and as these are always used in their proper connection, no misunderstanding as to their meaning can arise, and unconsciously the children are beginning to acquire a vocabulary in foreign languages, which is one of the most necessary parts of the study of these. From other various languages we derive other words; marcaroni, koumiss, vermicelli, sauerkraut, etc.

In describing the object of the classes in Domestic Science and to show the class that it is not a narrow subject confined to one part of the work of one room in the house, one of the best ways is to show the true meaning of the name of the subject and give them the translated Latin, Domus, the home; Scuo, I know—to "know home"—the word home always meaning rather the inner life of the inmates of the house than the care of it. Thus is accomplished at once something towards the elimination of the narrow and confined comprehension of the work of Domestic Science or Home Science and the introduction of a Latin phrase into the vocabulary. We have in the methods of cooking a process known as Sautéing—and the method is constantly confused with what has been and is usually called Frying. There is some difficulty in getting a class to discriminate between these two methods, but as a great help we have the simple translation of the word from the French in the first place,—from the verb "sauter" to jump or leap —and with classes who are reading French authors by reference to one of the books on the curriculum at present where in a description of the preparation of a meal we find our word in its double meaning—"Les pommes de terre sautaient dans the fruture crepitant," and the illustration accompanying it shows what is meant.

English Literature also has its co-relation. We have a certain chemical change in milk under heat which causes the formation of a wrinkled skin on the surface. This is used as a sign by which to tell when milk is scalded. This test has been given to the class several times and still escaped them until one day the lines from Oliver Wendell Holmes came into my mind in connection with it, and from that time they always remember it.

"My wife shall dress in finest silk,
Like wrinkled skin on scalded milk."

And in reading the poem they have a finer appreciation of the poet's meaning. Then in the warm summer months when it is hard to keep the attention of the class fixed, a few moments spent in describing Longfellow's story of the discovery of Indian corn or maize is not wasted. Not only are they introduced to a beautiful legend, as found in Hiawatha, but they acquire the knowledge which some pupils actually do not possess, that cornmeal is not derived from corn, and that Indian corn and maize are the same.

These are only examples of literary references which may be made if one is on the alert, but the fact that we can do so is a very important item in preventing the spirit of utilitarianism from creeping into the work. As long as the subject has to be made "popular" and the class is an option, there are many hindrances to the introduction of too much, or even enough theory, and as long as the idea exists that the girls go to the classes to learn to cook, we must resort to every device to make our work interesting, and unobtrusively make the necessary connection with the other subjects. Fortunately we are come to a time when all the larger towns and cities have either opened or are opening classes, when the subject is taught to the teachers in training as a necessary part of their preparation for life as teachers, and when there is less and less objection to it as a fad and more acceptance of it as an integral part of the school work.

Before leaving this subject, with which I can deal only briefly, it would seem to clinch the argument were I only to mention what many of you have already learned from a very interesting paper of Dr. McLellan's on the "Conservative Activities," that most of the studies on the curriculum have arisen out of the necessities of these constructive activities. Primitive man dealt only with the question of "what shall we eat, or what shall we drink, and where withal shall we be clothed?"

Out of these wants of man arose the need for agriculture, and out of agriculture arose the necessity for tools with which to till the ground and with which to prepare the products of cultivation into food and raiment. As civilization developed and the population increased, some necessity for division of the country arose and out of this necessity came arithmetic. As travel became wider, commerce began, and we have geography, etc. The traditions of the people and a record of their growth were set down, and we have literature and history resulting. From these main heads spring all other subjects and they grow and develop with the needs of the people.

Domestic Science is essentially a constructive activity and it is one of the bases of the other subjects surely that proves conclusively that there is a very intimate co-relation which cannot be evaded.

DOMESTIC SCIENCE.

By Miss Jennie Filson.

In this progressive and wide-awake world of ours, the cry is for specialists in everything. Work is becoming more and more specialized every day, and women should bear this in mind, and by study and observation seek to bring themselves up-to-date.

Less than a quarter of a century ago, Domestic Science conveyed no meaning to the Canadian feminine mind; to-day it suggests, though vaguely to most of us, the idea of superior cooking and sanitation. Then, a training in home duties was unknown and girls were supposed to attain such knowledge by instinct. Even now some girls are allowed to grow up without even knowing how to boil a potato or how to manipulate a needle. This should not be, for home-making is woman's sphere, and what is more important than being able to cook food in a dainty manner for the family, and what has a better effect in making them feel happy, comfortable and healthy? Every mother should strive to train her daughters to be good housekeepers.

You might ask how can Domestic Science help in the training. It can answer such questions as: How can a house be heated, lighted and ventilated hygienically? How can the body be kept in the finest and healthiest condition at the smallest expense? What is the best thing to do in case of sudden accidents? Why should vegetables be boiled quickly, meat slowly, and tea not at all, etc.?

The utilitarian value of this study to the individual girl lies in the fact that it gives her the best preparation for what, in all probability, is to be her life-work. With a thorough knowledge of its principles no one would be at a loss when confronted by new conditions and environment. I think that girls would like housekeeping better if it were always placed on a scientific basis. And women who are no longer young could manage their homes in a more easy, and perhaps more economical manner, if they spent a little time in the study of this subject.

We have read and heard quite a number of splendid papers treating of this science in its many phases. Our President requested me to tell something about cooking, as we were taught at Normal. Ruskin says, "Good cookery means the knowledge of all fruits, herbs, balms, and spices, and of all that is healing and sweet in fields and groves, and savory in meats. It means carefulness and inventiveness, watchfulness, willingness and readiness of appliance. It means the economy of your great grandmothers and the science of modern chemists. It means much tasting and no wasting—English thoroughness, French art, and Arabian hospitality." It means, in fine, you are to be perfectly and always ladies (loaf givers); and as you are to see that everybody has something nice to put on, so you are to see that everybody has something nice to eat.

The function of food is to provide growth and energy, and it is divided into three classes, viz.: (1) The proteids, such as milk, eggs, meat, etc., which build up the tissues. (2) The carbo-hydrates or heat producers, such as starch and sugar. (3) The mineral foods, such as salt, sulphur, iron, which build up hair, nails, etc., and some aid in keeping the blood pure.

Eggs are a typical food because they are almost all albumen and of the purest kind. Milk is a perfect food because it contains all the five elements necessary for life. Care must be taken to keep milk in a clean place as it very readily absorbs odors and impurities. To pasteurize milk, heat to 180 degrees, cool, and heat it again. This is done three times. Meat is composed of three nitrogenous compounds—albumen, gelatine, and extractives. Albumen is of the highest importance; gelatine is tissue saving, but because of its slippery nature is not valuable as a food when taken by itself. slipping through the body without exciting the flow of the digestive juices; and the extractives give the meat its taste and make it stimulating. To choose good beef one must see that it is purplish red when first cut and when standing it should be a brighter red with a moist surface, elastic but not sticky. The muscles should be well marbled with fat and the fat a light creamy color. Beef with short fibre is tender; long fibre, tough. Short fibred meat should be cooked in its own juices and that of long fibre in water. In choosing veal, get that which is pinkish white. If too pale, it denotes that it is too immature (less than six weeks old), or that it has been bled too much. Pork should be very well cooked, because it is more apt to contain germs of disease. The meat should be pinkish white and the fat white and firm.

Soup-making was next taught and we learned that soup could be made out of almost anything from bones to artichokes.

A normal diet must consist of all the different classes of foods. A person limited to proteid food, such as lean meat, would have to take more in nitrogen than is needed to supply sufficient carbon. On the other hand, on a diet of rice, you would have to eat enormously in order to get enough proteid and fat. The quantity and proportion of food needed varies with age, climate, habits of life and other conditions. It has been calculated, that a normal diet in this country would be as follows:—for one day—proteids, 3.5 oz.; carbo-hydrates, 17.5 oz.; mineral salts, 1 oz.; water, 100 oz. (6 pints); and fats, 1.7 oz.

This being such a wide subject, there is only room in this paper for a few thoughts. Science is systematic knowledge; therefore household science is knowledge of everything pertaining to the household.

THE EDUCATION OF OUR DAUGHTERS.

By Mrs. D. McTavish, North Bruce.

We hear a great deal now about Higher Education for women, and it would only be proper to enquire what that means. If it is an education which is to fit our daughters better for conducting and caring for the home, then it is higher in the truest sense. Woman's proper sphere is to be the home-maker, and it can scarcely be called a home unless there is a woman presiding there. There everything that helps to fit her for occupying that responsible position, with credit to herself, and with the greatest degree of comfort to the members of that home is an essential part of her education. Even in the Garden of Eden, before sin entered the world, man could not get along alone, and it was found necessary for his comfort that he have a companion to cheer and care for him. Then how much more necessary is it now, for since that time the cares and duties of home have been multiplied a hundred fold.

Since, then, the home and the care of it is woman's proper sphere, it is right and necessary that she should be fitted by education for doing so in the best possible manner. If our sons choose a trade or a profession, their teaching and training is all in that direction; and we cannot expect that our daughters will be competent to undertake these grave responsibilities without being properly trained for it. We make the highest and cleverest of our girls school-teachers, typewriters, and book-keepers, and if there is one not so bright and clever as the others, we think that she will be able to care for the home. But that is where we make our greatest mistake; for all these things put together do not require the same amount of care and forethought which the position of housekeeper requires. That is where we want the co-operation of "the head, the hands, and the heart," planning and working in unison in order to be able to "guide, to counsel and command."

Prizes were offered about three years ago, in the *Farming World*, for the best answers to the question, "What education should a girl receive who expects to be the successful helpmate of an up-to-date farmer?" and some very good answers were given. They had to be put in very concise form, as they were not to contain more than a hundred words.

One of the first things mentioned as being necessary was a liberal education. This, of course, means a thorough training in all the different branches, and should be such as to develop the thinking and reasoning

powers, and a taste for good reading. It should also render her competent to keep her household accounts. Let her have music also, as that is one of the things which cheers and brightens the home.

She should also be taught to take proper care of her health, and for that purpose she should take exercise, to develop her muscles and make her strong. I believe some girls are allowed to fall into poor health by neglecting this, not being enough in the open air. One of the best exercises for this is walking.

She should also have a thorough training in the principles of domestic economy, including sanitation and ventilation, and the hygienic values of food, fuel, and clothing. A course at the Macdonald Institute, even if it is only a short one, will be found valuable for those who wish to fit themselves properly for this work.

She will also require a thorough knowledge of dairying, and everything connected with it; to understand the proper care of milk, its value as food, and how to make a first-class article of butter. It is all right and proper to have accomplishments, but I consider that the girl who can make good bread and butter does more for the comfort of the home than the most skilled musician.

She should also be a good plain cook; one who understands what a balanced ration is, and what food the system requires under different conditions and temperatures. Not so much fancy cooking, but how to cook meat and vegetables that they may be rendered most nutritious, and at the same time appetizing. In one of the answers to the question I have mentioned some one said that a farmer's wife should know how to make cake; some one commenting on this answer said, "An up-to-date farmer does not require a wife to bake cake." Now I beg to differ from this; I think a farmer's wife, as well as any other man's wife, requires that knowledge, and although I do not approve of it as a daily article of diet, I think that she ought to know not only how to make it, but also when to use it. I think, however, that too much attention is paid to fancy cooking, and not enough to the serving of good plain meals which are so much better for both our stomachs and our tempers.

Then the girl who expects to fill that position should be good with the needle, and should know how to cut and fashion dresses and other articles of clothing for herself and the other members of the household. It will not do to have to run to the dressmaker for everything; it takes a big purse to do that, and the young farmer has to economize, if he wishes to succeed. Learn to dress plainly and neatly, and to select suitable material for the different articles, avoiding everything tawdry or flashy. We can dress our families tastefully and neatly without having them in frills and lace, and they will enjoy themselves more.

There is also a knowledge of home nursing required, for, alas, our families are not always in health, and we should learn to use simple remedies for accidents and emergencies; for sometimes we are a long way from a doctor, and life may depend on some prompt measure at the time. Along with this I would mention the care and training of children; to see that they are properly fed and clothed in order to develop healthy bodies and sound minds, for there is a great connection between the mind and the body. To see that they have abundance of pure air and sunshine, that their bodies are kept clean by means of the bath, in order that the pores of the skin may be kept open, and in proper order for throwing off the effete matter, and that their clothing be such as is fitted for the comfort and protection of the body, and not for display.

Her education would not be complete without a knowledge of gardening and poultry raising, for on the farm both of these have generally to be done by the farmer's wife.

A girl should also be taught the value of money, and how to expend it to the best advantage. The husband is the wage-earner, but it is generally the wife who is financier for the household, and she should try to do her part in spending it judiciously and to keep a strict account of it, and see that none of it is wasted.

Some may think that my list of requirements is long, but we could scarcely get along with a lack of any one of the different things I have mentioned as necessary. We must teach our daughters that it takes more than a pretty face and a nice dress to fit them for presiding over a home.

I remember hearing a simple ditty, which often recurs to my mind, and which helps to illustrate what I have said. It was about a young man who was on the look-out for a wife, and there were two sisters in a home where he visited. One of them was generally busy with the household affairs, helping her mother, while the other seemed to have more leisure and inclination to entertain visitors, and so she won the day. But he had drawn the blank instead of the prize. It ended with these verses:—

"Ten years after well he knew it,
Knew that he had chosen wrong;
Knew a dainty home and dinner
Were far better than a song.
Knew that white hands may be pretty,
For a lover to caress;
But the hands well trained to labor
Are the hands that truly bless."

See to it then, girls, that your hands are the hands that truly bless—the hands that know how to minister to the wants and comfort of those depending upon you: and they will not only bless others, but they will be a blessing to yourselves; and you will not only be a successful helpmate, but an inspiration and a blessing to one who will win you for a wife.

"She will do him good, and not evil, all the days of her life."

THE MODEL SICK ROOM AND REQUIREMENTS.

By Ellen Carter.

The comfort and well being of the invalid depend to so great an extent upon his surroundings that, in consideration of the universal liability to illness and accidents, there should be in every well arranged home, an apartment chosen and specially fitted for the use of the sick. But the matter, in spite of its importance, is so generally ignored that it is very rarely that the nurse will have the good fortune to find any provision made for such contingency. You will be called upon to nurse in all sorts of places, and often under the worst possible sanitary conditions.

It is important to have a clear idēa of what the sick room ought to be, in order to choose the least among unavoidable evils, and how best to utilize such advantages as you may chance to secure.

A model sick room is spacious, light, airy, clean and quiet. The larger the room the better it can be aired, the more airy it is the cleaner it will be, and the cleaner it is the more favorable is it for the recovery of the

patient. This is, therefore, an important consideration from a hygienic point of view. The sick room should be located on the sunny side of the house, having a south or west aspect. Only in exceptional cases, such as inflammation of the eye or brain, is it necessary to have the room darkened, and even then a south room with the light carefully modulated by blinds and curtains is to be preferred to a darker on the north side. Light is a healthful stimulus, and in the majority of cases not only light but direct sunshine is to be desired, partly for the additional cheerfulness which it imparts, but still more because of its actual physical effects. The Italians have a proverb, "where the sun does not enter the Doctor does," showing their recognition of it as a powerful agent. Also let us look at the effect the sun has upon the lower animals. The depressing effect of a week or two of cloudy weather is felt in the whole animal world. Cattle go moping about, the birds refuse to sing, the crows fly about giving voice to their discomfort; in fact everything, both great and small, shows the effect of cloudy gloomy days; but let a day of sunshine come, and behold the change; people meet each other with happy smiling faces, horses toss their heads and caper away, playful birds sing as though it was the first day of creation, insects hum, and all nature is joyful. If the lower class of animals feel its effects, how much more the higher class; and why is it so many of us shut it out of our houses; is it healthful or wise? Have as many windows as possible, certainly no less than two. They should be such as can be opened at both top and bottom, and should reach nearly to the floor, that the patient may easily see out of them. Bars and streaks of light are to be guarded against, as they may occasion a great deal of annoyance.

The sick room should be as far remote as possible from the noises and odors of the house and street. It should be solidly built, having walls thick enough to deaden external noises, and floors substantial enough not to vibrate under every tread. When this is not the case, manage, if possible, to have the room above unoccupied. There are numerous advantages to be gained, especially in cities, by having the sick room at the top of the house. It will be more quiet, in a stratum of purer air, and, in case of contagious diseases, can be more completely isolated. On no account should there be stationary basins in the sick room itself. If you find there are such modern conveniences, cork up the overflow holes, or stop them with plaster paris, and fill the basin with water which must be changed from time to time, or cover it entirely and closely.

The increased security will more than compensate for the extra trouble. Only with the utmost precaution against leaky and defective taps, are drainage pipes to be allowed even in the adjoining dressing room. The latter is an important adjunct to the sick-room. In it are to be kept the bath and toilet appurtenances. Ample closet room is also desirable, with shelves and drawers for the reception of linen, and of the various medical and surgical appliances which may be needed, but which should never be visible in the sick room. It is a common but very reprehensible practice to have food, medicine and all sorts of paraphernalia lying about, in a confusion that would be enough to make a well person sick. They should all be banished except at the moment of actual use. Growing plants and freshly cut flowers of not too strong odor may fill their places, if desired. They are quite unobjectionable. The water in which flowers are kept must be daily changed, and the flowers themselves thrown away as soon as they begin to fade. Do everything possible to make the sick room the brightest and cheeriest in the house. A certain amount of depression is the inevitable accompaniment of sickness. It cannot be entirely dispelled, but all counter-

acting influences should be resorted to. Dark, gloomy, and unpleasantly suggestive surroundings do much to intensify it.

The walls and ceilings are best of some soft, uniform neutral tint, as pale green or French gray. Avoid wall papers of conspicuous tone or regularly recurrent figures. Better than any paper, is paint, or a hard finished surface which can be scrubbed. The wood work should be severely plain and flat. There should be no cornice or mouldings, and no woolen curtains, portieres or drapery of any kind. All woolen stuffs easily become infected, and are extremely difficult to disinfect. If any curtains are used, they should be of light washable and frequently washed material. Carpets even are much better dispensed with. Rugs may be used, as footsteps are noisy on a bare floor, but they must be small enough to be daily removed, shaken and aired. If there is a carpet it can only be thoroughly swept and cleaned when the patient can be got out of the room.

The essential furnishings of the sick room are,—bed, a bedside table, an easy chair, a lounge, and a large moveable screen. The latter can be readily improvised by fastening a sheet over an ordinary clothes horse. A bed tray with a low rim round three sides may be used by the patient for all the purposes of a table. These trays are about thirty inches long by fourteen broad, and stand on four legs high enough to keep all the weight off the body. A bed rest, a commode and similar small conveniences may be desirable, but the fewer superfluous things the better. All the furniture should be of the simplest possible style; elaborate carvings only afford lodging places for dust, and whatever adds to the difficulty of maintaining absolute cleanliness is to be avoided. Everything should be substantial and in good repair. Ill-fitting blinds, rattling windows, and creaking doors, are nuisances demanding speedy remedy. Many slight and apparently unimportant noises, which are, nevertheless, peculiarly annoying to the sensitive nerves of the sick, may easily, with a little care and forethought, be done away with. Keep rocking chairs out of the room. Avoid wearing clothes that rustle, or shoes that squeak. Noise which is understood and inevitable is far less trying than a much slighter noise unexplained or unnecessary. Intermittent is more hurtful than continuous noise. Sudden, sharp, and jarring sounds are especially bad. A good nurse never startles her patient; even in such a small matter as her way of addressing him, but is considerate of his weakness. Do not speak abruptly from behind him, making him first jump, then turn round, then ask what you said; get his attention before speaking and use a clear, distinct, though not necessarily loud voice. Whispering in or just outside the door is one of the worst of many distressing forms in which the solicitude of the patient's friends will manifest itself. There are few things more tormenting, though it is usually done with the very best intention of not disturbing him. A low distinct tone, when conversation is necessary, will seldom annoy. Whispering always will. It should be a rule that whatever the patient is not intended to hear should not be said in his presence.

These seem very small points to dilate upon, but good nursing depends largely upon attention to details so apparently trivial that a careless person would never think of them, but which yet make or mar the comfort of the invalid. Small things assume momentous proportions in the limited interests of a sick room. Nothing is insignificent or beneath notice which has any bearing upon the welfare of the patient. To keep the sick room in a proper condition is as important a part of your care for him as more personal administration. A nurse ought not to be expected to do housework which can be equally well done by someone else.

The work of a nurse in a private family varies so much with circumstances, that its limits cannot be precisely defined. But with all due regard for your professional dignity, surely you will rather perform the most disagreeable and commonplace tasks than let them go undone to the detriment of your patient.

You must be prepared to encounter many inconviences, your ingenuity as well as your patience will often be taxed, and sometimes you will find yourself looked upon as a kind of machine, expected to run night and day without even needing to be wound up. In a hospital there are no difficulties of this kind, as everything is planned with reference to the needs of the sick. The most convenient appliances are at hand as a matter of course, the duties of each person are definitely assigned, and the work, as much as possible, simplified by systematic arrangements and regular hours.

HINTS ON HOME NURSING.

By Miss Annie Dick, Brampton.

(Graduate Toronto General Training School for Nurses.)

As this paper is to be composed of hints only, the difficulty is to make them to the point and broad enough to be understood, else they will be of no value.

Let me begin by advising every woman who has not a thermometer in her home to invest in one on the first opportunity and study a few things about temperature. This would save hours of worry and anxiety to many. Don't let anyone prevent you from buying one, with the advice that the less you know about these things the better. Anyone who gives such advice is as stupid as the ostrich which hides its head in the sand and thinks because it refuses to look at danger it will escape!

Many times a person, especially a child, whose temperature has risen, and who complains of sickness, if put to bed, kept on light diet, and given generous doses of medicine until the bowels move freely, may escape a severe illness.

But when severe illness does come and you wish to nurse the patient as carefully as possible, begin by making her comfortable—the comfort of the patient is a rule which must never be lost sight of, if you would do good nursing—remove all unnecessary bed clothing; the clothing should be as light as possible. In the hospitals, each bed has a rubber half sheet under the cotton sheet, pinned at each corner to the mattrass with safety pins. In private homes, a cotton quilt under the sheet is sometimes used, or simply a cotton sheet folded once and placed over the usual sheet. In an emergency, half a dozen newspapers placed under a sheet will protect the mattrass—but whatever is used must be kept perfectly smooth under the patient. Loose, wrinkled bed clothing is very uncomfortable to lie on, and is one of the things that help to make bed-sores.

Bed-sores are something you should begin at once to guard against, and remember it is easier to prevent bed-sores than cure them. Cleanliness is one preventative; dry smooth bed clothing, another; turning the patient occasionally, another; (turning is also necessary to help circulation and guard against pneumonia) rubbing the back and other sensitive parts, morn-

ing and evening, another preventative. We use a little alcohol or whiskey in the palm of the hand when rubbing, as this helps to harden the skin; but remember it is the rubbing which prevents the bed-sores. Rub firmly and gently until all redness has left the skin. A little powder dusted on afterwards will absorb any moisture. If the skin once breaks don't rub that part or put any spirits on it. That requires other treatment which I cannot explain in these notes. Your doctor will tell you what to do.

The care of the mouth is another very important item in sickness, that also should have attention from the first. Have some member of the family cut up old linen or soft cotton into pieces about three inches square. A pasteboard box filled with these should be kept in the sick room ready for use. There are many mouth washes we might give, but the one I like best, and which as a rule the patients seem to prefer, is a mixture of lemon juice, glycerine and water, of equal parts. Have the mixture made up in a bottle, pour a little in a small dish, dip one of the cloths into it, gently squeeze the cloth, then wrap it around the index finger, tell the patient to open her lips and shut her teeth, rub around inside the teeth; put this cloth away, take a fresh one and do inside the teeth; another cloth or two finishes the tongue. A small dish or a paper should be at hand to receive the soiled cloths, which should be burned at once. And remember that a sore mouth, like a sore back, is much more easily prevented than cured.

Perhaps it would not be out of place to mention here that we are taught to wash the babe's mouth from the first day of birth, in the same way, only, of course, not using this mixture, and being careful that the pieces of linen or muslin are soft. Simple warm water or borax water does for the wash. The child's mouth should be washed three times a day. Thrush is caused by neglect of this, particles of milk collecting around the gums, where they decompose and set up fermentation.

To go back to the patient; if a woman, keep her hair braided in two braids. You can then comb one-half from either side of the bed. That saves the patient from all exertion, except the slight one of turning her head.

If ice-cloths are used on the head, use only one ply of cloth and change frequently. If several plies are put on, it will produce the opposite effect to that which an ice-cloth is supposed to produce.

Keep the patient's feet always warm. If you haven't a rubber bottle, fill gem-jars with hot water, and, after testing them to see that they do not leak, wrap flannel around them, taking care that you do not burn the patient.

Give nourishment and medicine always on time, not twenty minutes before or after the hour. Don't be afraid to give water to drink. Patients should have all they want and some patients should be persuaded to drink more than they wish (this, of course, cannot be followed when the doctor leaves us orders limiting the amount of liquid). Some doctors order typhoids to drink a pint, or a pint and a half, every twenty-four hours. Water taken internally or applied externally helps to reduce temperature.

There is all the difference in the world between sponging a patient to reduce temperature and bathing a patient for cleanliness. Before beginning to either bathe or sponge see that you have everything you will require at the bedside before you disturb the patient; have two pieces of old blanket, one to put under the patient to protect the bed, and one for covering. To bathe, rub quickly under cover of the blanket with tepid water and dry thoroughly with towel. This is for a weak patient with no elevation of

temperature. For sponging, either the piece of blanket or the cotton sheet will do for covering. Sponging is done with long slow strokes, first one part of the body, then another. For instance, let the patient place her hand in yours and tell her to relax her arm, you must support the arm, not she. Then squeeze the sponge, so that it will not drip. Begin at the top of the arm, bring it down slowly in one long stroke to the tips of the fingers. Go around the arm in this way, dipping the sponge after each stroke. Five minutes for each limb and breast, with ten minutes for the back are not too much for high temperature. The water may be used from cold to iced, according to the temperature, comfort of patient, or doctor's order. A light dab with a towel is sufficient for drying; the water will quickly absorb on the hot skin. Finish the sponging as quickly as possible. Generally the patient, if not disturbed, will fall asleep after a sponge, and there is nothing like natural sleep to reduce temperature. Change the patient's gown and bed linen every day. If they cannot be washed each day, let them hang out in the sunshine to air.

Diseases are divided into two classes, acute and chronic. We all know that, as a rule, chronic patients are pleased to see visitors and like to be amused, but, unfortunately, people do not seem to understand that persons acutely sick are sacrificing so many chances of living with every visitor they see.

Don't worry a patient asking questions, for anyone very sick talking is hard work; and don't ask her what she would like to eat. If she knows she'll soon tell you, otherwise you must do the thinking.

Don't whisper in a sick room unless you wish to torture every nerve in the patient's body. This may seem very insignificant advice, but worth your attention. Let me tell you what I heard a woman tell some years ago. I have never forgotten it, so much did it horrify me at the time. Mrs. A.— was telling of the illness and death of one very dear to her. "Yes," said Mrs. A——, "It is just two years since Mary died, and how well I remember the day before she died. Mrs. B—— and I were sitting in the room talking in a low tone which we thought Mary couldn't hear, and I remarked that it would be just a year to-morrow since Jenny died. We were so surprised when Mary spoke up and said, 'Yes, just a year to-morrow since Jenny died, and to-morrow I'll be with her'." Think of it, Mary lying weak and nervous, hearing two people whispering about recent deaths and knowing that her own was being contemplated. Is it any wonder she died the next day? And yet the woman who did this, and told it, was a loving and kind woman with no thought of being cruel. Everyone of us has been just as cruel, each in her own way, and it all arises from lack of knowledge.

Just one more don't—don't darken a sick room; open the shutters, push up the blind, and let in every ray of sunshine that is to be had. If the air outside is hot, keep damp sheets before the window. One writer says, "It is often a source of wonder why so many describe in minute detail the treatment intended for a patient and say not a word about these important aids, fresh air and sunshine." If the doctor handed you a tonic with one hand, telling you to give the patient a teaspoonful of it, and, with the other hand poison, to be given at the same time, you would think him insane, and yet that is just what you are doing when you work with one hand to save the patient's life, and with the other darken the room. Time will not allow me to touch on the care of contagious or any particular disease, and many more hints could be given on general nursing, but we believe that a few, strictly observed, will be of more value than the knowledge of many not carried out.

CONSUMPTION: ITS PREVENTION AND HOME TREATMENT.

By Miss Isobel Rife, Hespeler.

In view of the fact that scientific investigation and discovery is constantly enlightening us, we may but keep abreast of to-day, knowing that the morrow will bring greater revelation. The spirit of investigation which is rife is bound to confirm or refute our ideas, and he who is wise will strive —particularly in the subject under discussion—to keep himself posted. Eminent physicians are spending the best of their energies to arrive at the truth, and it is our duty to accept and live in accordance with their efforts on our behalf. Nature alone is constant and we suffer as a result of the violation of her laws.

The word consumption means to consume, to bring to naught, to waste away. It is aptly termed "The Great White Plague," because it comes with such insidious and silent tread that its footfalls are unheard. It may affect almost any part of the body, but we shall confine ourselves to what is termed "Tuberculosis of the Lungs." Each year this form of the disease sweeps off more victims than all other contagious diseases combined. If smallpox or diphtheria invade our locality we take every precaution, but we pay little attention to this plague because "It is not in our family." Let us beware, for no class or kind is secure from its ravages. At one time leprosy was prevalent: to-day we rarely hear of it. So it may be with consumption, which, taken in time, is curable, and under proper conditions is preventable. Many people when diseased lose heart and so allow the lamp of life to burn out for want of trimming. Previous to the establishment of sanitoriums, consumption was on the increase but, thanks to those institutions, and the observance of better sanitary laws, it has, during a period of four years (ending 1904) decreased forty per cent. in spite of an increase in population.

Douglas Powell says:—"Consumption is essentially a scourge of what we term Civilization." By this he does not mean the blessings of civilization, but rather its attendant curses—intemperance in anything, bad sanitary environment, irregularity of living, and other evils. Indian and Nomadic tribes in their wild state rarely suffer from tuberculosis, but on being brought into civilization, where they still retain their filthy habits in badly ventilated houses, with little pure air to offset disease, they rapidly succumb to its ravages. Statistics prove, "The denser the population, the higher the death rate," while the prevalence of tuberculosis in river and industrial districts point to social rather than climatic causes. Ignorance of the nature of the disease, of protective measures, of the fundamental laws of health, is unnecessary in this enlightened age, and neglect may be designated crime.

Heredity does not play such an important part as was formerly supposed. Statistics of the world prove that there have been known cases, but these are so rare as to warrant one in stating that tuberculosis is NOT inherited. On the other hand, predisposition, or a certain constitution of the tissues which furnish a suitable soil for the settlement and growth of bacilli or germs is frequently communicated. Any characteristic, particularly if it be of the nature of a taint or deterioration common to both parents, is liable to be intensified in the children. A flat chest, slender body, general lack of vigor or any other hereditary taint should be a warning to use every precaution for prevention. Our family physician tells me that if he were in the insurance business and bound to pay the risks out of his own pocket he would prefer to insure a child of consumptive parents, which had been removed from its home at birth and reared in sanitary surroundings, rather

than a strong, healthy person, with no predisposition to the disease, but who was living in the home of a consumptive.

Koch's theory, "Without the germs of consumption there can be no consumption" is now countenanced by the greatest authorities. There are two things necessary for harvest: the poisonous tubercle bacillus, infection, seed or germ, and the suitable receptive, non-resisting soil, commonly termed predisposition. Disease germs surround us on every hand. When they enter the body they are met by a sort of standing army of blood cells which promptly oppose their entrance. It is this protective antidotal force in the blood which saves us from disease. The germ is a minute vegetable organism which lives on and destroys tissue besides giving off certain poisonous substances called toxins. Consumption may give off millions or even billions of these germs per day in the sputa, excreta, perspiration and breath. These may be communicated to us by means of air currents, dust, milk, solid bodies, as clothing, money, meat, public conveyances and many other ways. When the germs meet with tissue upon which they can thrive, they divide and sub-divide very rapidly. The spores or secondary germs are more difficult of destruction than the parent plant. They thrive better where there is no oxygen or direct sunlight. When kept from these their vitality may be preserved for months or even years; when moist they are practically harmless. Consequently we have the following important keynote:—Dwell so far as possible in the sunshine and pure air, and, if bacilli be present, keep them moist until you have an opportunity of destroying them. In tuberculosis the sputum is the most dangerous agent, and too much care cannot be given to its destruction. Burning is probably the most effectual method. For this purpose use a strong metal box with a handle about three feet long. Invert the box over a fire in the yard or in a stove or furnace used solely for that purpose. Brisk boiling for half an hour in a tightly covered pot will destroy all germs. If disinfectant be used, cover carefully and allow to stand from eight to twelve hours. The quantity of disinfectant should be in excess of the sputum. A five per cent, solution of carbolic acid is excellent.

The bacilli have several methods of entering the human system:—

First (and most common) by inhalation or breathing into the lungs. Many of us who would scorn to drink after another will sit contentedly in a crowded room, breathing the air exhaled from foul lungs. We say that carbonic acid gas is bad for us, but we rarely stop to think that in addition to this we are breathing a still worse element, namely, organic poison, or in other words—worn-out tissue. "Millions of the units of the human family die primarily or remotely and literally for lack of breath" (Playter). Consumption selects its victims from poor breathers, and we may add that correct breathing is the most vital and important function of the body. We hear so much lately along the line, "Tell me what you eat and I will tell you what you are," but we rarely consider that individuals who have lived for weeks without food would die in a few moments without air. Pure outdoor air is plentiful in most parts of our land and lung capacity may be developed. Full breathing promotes the circulation of the blood through the entire body, thus assisting in the elimination of disease and aiding in general nutrition.

Second mode of entrance, by ingestion or swallowing. Consumptives, through a false idea of modesty, sometimes swallow sputum. This is very dangerous, as they run the risk of infecting the already enfeebled body and thereby lessening their chance of recovery. For the same reason a consumptive should never use for the nostrils any handkerchief used for the

lips. The disease is frequently contracted through the use of tubercular meat or milk. If there be any idea that these foods are not up to the mark, give the meat extra long slow cooking and boil or sterilize the milk, particuarly if it be intended as food for children.

Third mode of entrance, by inoculation or infection, entering the blood through a cut or abrasion of the outer or inner protective covering of the body.

Children living with consumptives are particularly susceptible to the disease. The vitality of child life is low and easily overcome. When bacilli are projected into the air by coughing or loud talking, they settle rapidly to the floor, and the child not only breathes the disease laden air, but swallows many of the germs.

The subject really resolves itself into one of prevention. We aim at destroying the bacilli. Why not strive rather to build up a healthy body which will give them no condition in which to propagate. Seed will not flourish on every soil. For health we require regularity of living in sanitary surroundings, deep breathing, plenty of oxygen, sunshine, pure water, nutritious food properly masticated, tonic baths, exercise and rest. Here we must make a distinction; exercise is a means of prevention, but for a consumptive the open air rest cure is considered the best treatment, and exercise should only be taken under the direction of a competent physician. Dr. Lawson Long prescribes as a preventive a swing made of a broom stick three feet long, suspended at the middle so that one must give a slight spring to grasp it at either end. He says, "I am mortally certain that if this were to be practiced by the rising generation in a dress allowing free and full development of the body, thousands, yes, tens of thousands, would be saved from the ravages of consumption." Laws against expectoration in public places should be rigorously enforced, and, if the various Provincial Boards of Health could formulate one code to be applied throughout the Dominion, our children might go from the schools prepared to fight this evil, rather than succumb to its ravages. The time is also ripe for the insistence that physical culture be a part of the curriculum in every school for girls as well as boys. The circulation of racy leaflets of two or three pages on:— "How to breathe." "Methods of disinfection." "Is tuberculosis hereditary?" "The danger of promiscuous spitting." "The value of sunshine." "The hygiene of the bath," etc., would be of inestimable value.

Climate is not so important in the treatment of tuberculosis as was at at one time supposed. Experiment has proven that the disease may be successfully treated by means of sanitary living in any ordinary heatlhy climate. It is always better to seek a cure in the neighborhood where one expects to reside permanently. Other things being equal, a rigorous climate gives the best results.

Sanitoriums are doing a splendid work, but, for lack of funds, the accommodation is inadequate. Here is scope for public and private philanthropy which will yield returns a hundred fold. The Muskoka Sanitorium and Free Hospital, also the sanitorium near Toronto for advanced cases, are able to help only a few of the thousands who suffer from and transmit the disease to others.

The Women's Institute is leavening home life in this Province, and the combating of the Great White Plague is one of the greatest phases of philanthropic work with which our women could be identified. Let us study and fight to the death this dread evil.

Questions.

Q.—Which is correct, sanitarium or sanitorium?

A.—Both are used. The former means health, but the latter, meaning "To heal," is preferable.

Q.—What do you mean by *Tonic Bath?*

A.—Baths may be divided into two main classes:—

(*a*) *Cleansing* taken by means of soap, hot water and vigorous rubbing.

(*b*) *Tonic.*—For the purpose of stimulating the nerve endings, increasing the circulation, invigorating the system, and making one less susceptible to cold. These may take various forms, but the cold sponge is the most universally employed. One must come to extremes of temperature gradually.

Q.—Do not some physicians take exception to the giving off of bacilli in the breath?

A.—Yes. The dangerous element is the sputa sprayed with the breath into the air when speaking or coughing.

Q.—Why are the secondary germs harder to destroy than the original germ?

A.—Because the original germ loses some of its vitality during the process of taking root, while the secondary germ is already rooted in the tissues and has simply to grow.

Q.—Why keep the sputa moist until destroyed?

A.—Because when dry it becomes pulverized and mixes with the air.

Q.—Where may one secure literature *re* Tuberculosis?

A.—Circulars from:—Chas. A. Hodgetts, Sec. Prov. Board of Health, Toronto, Ont.; J. S. Robertson, Sec. National Sanitorium Association, Toronto; League for the Prevention of Tuberculosis, 11 Bleury St., Montreal; Canadian Association for the Prevention of Consumption, Sec., Rev. Wm. Moore, D.D., 128 Wellington St., Ottawa; Maine State Board of Health, Sec., A. G. Young, M.D., Augusta, Maine, Circulars 54 and 70 and "Eleventh Report (50 cents); M. Firestack, 200 W. 96th Street, N.Y., Book, "Tuberculosis as a Disease of the Masses and How to Combat it," by Dr. S. A. Knopf (paper 25 cents, cloth 50 cents); Report of the Henry Phipps Institute, 238 Pine Street, Philadelphia.

N.B.—J. S. Robertson, of the National Sanitorium Association, says:—

(*a*) In reference to the Eleventh Report:—"I have found this myself most invaluable for constant reference. Probably for general information there is nothing more useful."

(b) In reference to Dr. S. A. Knopf:—"He is probably the best authority on this subject in America."

SOUPS AND SOUP MAKING.

Miss Agnes W. MacKay, Ailsa Craig.

Soup is an article of diet that is not used nearly so much as it should be in the average farm or village home. It is a light, healthful and stimulating food, agreeing with everyone. It is more of a stimulant than a nutrient. as is generally supposed; containing a large proportion of water, there is little nourishment in it. Soups may be given to little children as their first food after a milk diet of babyhood, and are equally valuable for the aged whose digestive functions are weak and need the stimulus supplied by the hot soup. In cases of extreme exhaustion nothing is better

than a cup of hot soup which can have no bad after effects. In the cases cited, a clear meat soup is meant. The cream soups and purees are so nutritious that, with bread and butter, they furnish a well balanced meal.

Soups are of two kinds.—clear and thick, or stock and milk. Stock is the broth resulting from long, gentle cooking in water, of meat, poultry or fish. Pieces of meat which are of little use if otherwise prepared,—tough muscle and bone, shin, neck, or tails and calves' heads.—are used for soups. The flavor, aroma and sapidity of broths is due to osmazome which exists only in flesh and blood and is more abundant in the meat from old animals, and in dark meats. The properties of osmazome are more noticeable in roasted or broiled meats; and, as it excites the appetite and stimulates digestion, it is advisable to brown the soup meat before adding the water. The only nourishment in soup is albumen, a substance found in flesh, and in much greater abundance in blood. It is very much like the white of an egg, is soluble in cold or tepid water, but coagulates when heated: the nutritive properties are largely lost when it coagulates. Hence, soup meat should be put on in cold water—it is better if soaked in the water an hour first—heated gradually and simmered gently until done. In making soup, use about twice as much meat as bone, and from a pint to a quart of water for each pound of meat and bone. Put salt in at first, as it aids in extracting the meat juices. When it has cooked three hours, add seasoning, and mixed vegetables in the proportion of one quarter pound to each pound of bone and meat. Continue cooking until the meat is in fragments, about four or five hours in all. Strain through a sieve and set aside to cool. The fat will form a cake on top, which should not be removed until the stock is to be used. The stock will keep a week in winter and about three days in summer. In hot weather the vegetables should not be cooked in it, but should be added as it is heated for use. In clearing soups, the scum, which contains the chief nutritives, is removed.

The stocks recognized by authorities are four:

Bouillion—made from lean beef, cleared.

Brown stock—made from two thirds lean beef, one third fat and bone, highly seasoned with vegetables, spices and sweet herbs.

White stock—made from chicken or veal.

Consommeé—from beef, veal and chicken, highly seasoned with vegetables, spices and sweet herbs; always served clear.

To these is sometimes added *lamb stock*.

A thoroughly reliable recipe for stock is,—2 lbs. raw meat and bone; 1 lb. cooked meat, or meat and bone; 3 qts. cold water, fresh or from cooked meat or vegetables. To each pound of meat and bone allow one tablespoonful each of carrots, onions and turnips cut in one-half inch cubes, one stalk or root of celery, one bit of bay leaf, one sprig of parsley, two pepper corns or a few grains of pepper. Have the bones sawed in one inch lengths and split. Cut the meat into one inch cubes. If raw meat only is used, brown one-third of it in a little fat in the bottom of the pot. Let meat and bones soak in water one hour, then simmer in a covered kettle four or five hours. About one hour before taking off, add vegetables and seasoning. Strain, and set aside to cool. If desired darker in color, cut an onion in half, bake on a tin plate till very brown, and add to stock with vegetables. From this foundation many soups may be evolved. The addition of sliced vegetables gives a vegetable soup. Macaroni, noodles, and dumplings make other varieties. Made very thick with vegetables and pearl barley, it is hotch-potch. It may be thickened with rice or tapioca.—in short, the possibilities are endless.

The milk, or thick soups are:—

Cream Soups—made of vegetables or fish, and thickened milk.

Purées—very thick cream soups, and perhaps white stock.

Bisquis—generally made from shell fish and milk.

The cream soups are a combination of white sauce and vegetable pulp. They are rather heavy for dinner, with meat, but are suitable for the main dish at luncheon or supper. The vegetables are cooked until soft, rubbed through a seive and, except potatoes, are used with part or all of the water in which they are cooked. Add a speck of soda to the milk before heating and it will not curdle. Thicken according to the density of the pulp. All, even potatoes, are better of a little thickening.

The following *Cream of Potato* may be adapted for almost any vegetable:—

Mix one cup of mashed potatoes with one pint of hot milk; add one cup white sauce, flavor with salt, pepper, celery salt and onion juice.

Bean Soup. Soak one cup of beans over night, drain and put on to boil in one quart of cold water. Fry one slice of onion in one tablespoonful of butter until slightly brown, and add, with one stalk of celery, to the beans. Let simmer till very soft, adding a little cold water occasionally to check the boiling and help soften the beans. Rub through a soup strainer, put over fire and when hot, add one cup white sauce (made of one tablespoonful each of flour and butter, cooked together and thinned with one cup hot milk). Season with salt, pepper and a bit of mustard, and serve with a very thin slice of lemon in each plate.

Potato Purée—(a rich soup). One lb. potatoes, pared and sliced; one Bermuda onion, two leaves celery; one and a half pints stock; one gill single cream: one oz. butter: one half teaspoonful each of salt and pepper. Put potato, celery, onion and butter in sauce pan over fire, stir for five minutes. Add one pint stock and boil until potatoes are done, pass through sieve, adding the half pint of stock, hot, to prevent clogging sieve. Return to sauce pan, add cream, pepper and salt, and stir until it boils. Serve at once.

Soup is an extremely economical food, if care is exercised in its preparation. In small families it will be necessary to buy meat for it, but in large families, the bones and trimmings of roasts, steaks, etc., will serve In buying meat for soup-making, the cheaper cuts, neck, cross-rib, plate, flank and skin are best. The skin is the most desirable piece for every day stock, as it is so gelatinous. Smoked or cooked meats should not be used. When making soup from left-overs, all scraps of cooked or raw meats may be utilized, and also any scraps of cooked vegetables, the water in which fresh meat, poultry or young vegetables have been cooked, or even a spoonful of gravy. There is almost no limit to what may be done with left-overs, if one brings to the task an ingenious and inventive mind.

YEAST AND ITS HOUSEHOLD USES.

By Miss H. A. Glaspel, Tavistock, Ont.

In bread-making, the management and control of the yeast and its fermentation is usually the least understood part of the operation. It is owing to mistakes in its treatment that the greater number of failures in bread-making are due, for no manipulation of flour or dough will compensate for weak or badly prepared yeast.

At the outset, let me define a few terms that relate to this subject. The term fermentation is as a rule confined to the production of alcohol from substances containing sugar, but in the extended use I shall give it, it denotes the chemical change caused by micro-organisms in substances; for instance the germ causing the souring of milk is called the lactic ferment, and the changes which it causes constitute lactic fermentation. Similarly the production of vinegar or acetic acid is caused by a microbe, and the substance from which the vinegar was made is said to have undergone acetic fermentation. In the fermentation of flour, the sugar which is always found in the wheat grain, is acted upon by a living organism—the yeast plant—and is changed into alcohol and carbonic acid gas, the same gas which causes beer to froth. In baking the dough the alcohol is almost entirely evaporated.

Putrefaction also is caused by minute vegetable organisms and decomposes matter into its chemical constituents. It is difficult, if not impossible, to draw any clear distinction between the process of fermentation and that of putrefaction, but the latter term is usually applied to substances that are decomposing and producing a bad odor. In order that putrefaction may go on, four things are necessary; (1) The substance to be decomposed, (2) the vegetable organisms to cause decomposition, (3) a suitable temperature, (4) Moisture. These are all present in dough.

The last term is bacteria. When any dead vegetable or animal matter is left exposed in a warm moist atmosphere, it immediately begins to decay. This change is caused by the growth in it of minute organisms called germs, microbes, or bacteria. These organisms are the simplest forms of vegetable life and multiply very rapidly by simply dividing, each half again dividing when it has grown mature. Not all bacteria are harmful, for in butter or cheese-making certain forms of bacteria are necessary to obtain good results, but in bread-making bacteria are undesirable and often harmful. Though bacteria are always present in flour, and no practical means has been found to eradicate them, yet if the utensils used in making yeast and bread are kept free from bacteria by frequent scaldings, it will thus reduce to a minimum the probability of having dark or sour bread. Yeast is not a bacterium but is used to ripen dough in a manner somewhat similiar to that in which a "starter" (or sample of milk containing desirable bacteria) is used in the dairy business to ripen the cream.

The earliest bread-makers used nothing with their crushed grain to make it rise, hence their bread was hard and solid, and so had to be in thin cakes; nevertheless the use of yeast for bread-making is very old. The Jews were acquainted with the use of "leaven" or yeast, for we read that Lot did make them a feast and did bake unleavened bread. And the use of yeast for making wine is even more ancient, for we learn that Noah, the second father of mankind, planted a vineyard and made wine, and about the year 2000 B.C. Ching Noung, a Chinese philosopher, taught his people how to make bread from wheat, and wine from rice. Baking reached a high state of perfection in Egypt and became a profession at Rome in 170 B.C. After the conquest of Macedonia in 148 B. C., numbers of Greek bakers came to Rome, secured special privileges, and soon obtained a monopoly. Later, a special magistrate was appointed to superintend the public bakeries. From Rome the method of bread-making spread gradually with civilization, and at present, fermented bread is in general use, except in a few of the northern countries of Europe and in other places distant from civilization.

The yeast plant belongs to that division of the vegetable kingdom known as fungi, a group of plants which do not possess any green

coloring matter, and hence must obtain their nourishment from organic matter. The plant consists of a single cell which under favorable conditions sends out from its surface a bud which gradually increases in size. This bud may or may not remain attached to the parent cell.

Under the proper conditions of moist surface, plenty of air, suitable temperature and vigorous cells, small round bodies, from two to eight in number, are formed inside the old cell. These small round specks are called spores and will grow more yeast plants, just as seeds of flowering plants will grow their kind. The spores might be termed the seeds of flowerless plants. Spores may remain dormant for a considerable time, but will germinate again when placed in suitable food. They, like seeds, are more resistant than the parent plant, and though the yeast cell will live for a considerable time in the dry state, yet the spores will start to grow again after being kept for a much longer time.

There are hundreds of varities of yeast which all act alike but in different intensities. No doubt any of the yeasts would cause fermentation in the flour, but some would require a far longer time to cause the dough to rise to the same extent as another would. Many kinds produce a bad flavor, and others a bad color in the loaf. Bakers' yeast is sold in three forms, viz.: compressed, dried, liquid. The compressed yeast is in the form of moist cake which should break grainy and not stringy; it keeps only for a few days and therefore is not suitable for persons living in the country. In towns it is usually distributed every few days. When free from bacteria, or mould, it is usually the most satisfactory form of obtaining strong yeast, but is invariably more contaminated that that obtained from breweries and distilleries. Dried yeast is sold in the form of dry yeast cakes or powder, and consequently cannot support bacteria. It keeps longer than the moist compressed yeast but loses its vitality if kept too long. Liquid or brewery yeast grows in the fermentation vats, and that which sinks to the bottom gives the best results, being purer. It sometimes gives a bitter flavor, but it is said that this may be overcome by washing the yeast in cold water, and allowing it to settle, the water being then poured off.

The most striking change in dough after the addition of good yeast is the rising or swelling of the mass. This is caused by the action of the yeast upon the sugar of the flour, and to a slight extent upon the starch, which has been changed into a kind of sugar called dextrin. As previously stated the yeast lives upon this sugar, changing it into alcohol and carbonic acid gas. The latter being unable to get away, owing to the sticky nature of the dough, is held in small bubbles which expand when beaten. If the yeast is not allowed sufficient time to make the dough porous, the result is sticky, "heavy" bread. If the yeast has worked the dough too long, then the gluten is stretched too much and the bread is brittle and crumbly.

Different temperatures have as much effect upon the growth of the yeast plant as upon that of other plants. A temperature of between 75 deg. and 90 deg. F. seems to be the most favorable for gas production in the sponge, and the temperature at which the yeast is grown should be somewhat lower than that at which the sponge is set. Although the above figures are near the limits for good fermentation, still the temperature of the flour and the water before mixing must always be taken into account, as must also the temperature of the air. In winter when the flour is cold the setting temperature may require to be as high as 95 deg. F., while in summer it may be as low 70 deg. F. A thermometer should be used, for it is as important in bread-making as in butter-making or cheese-making.

It is also extremely important that the yeast be as free as possible from moulds and bacteria, but it is seldom, if ever, that any bread-making yeasts

are found which are not contaminated to a greater or less extent. While it is often possible to have a yeast contaminated and still obtain good bread, yet it is almost certain that if the yeast-cells become weakened from any cause the bacteria will increase with such rapidity that bad bread will be the result, but when the yeast is strong and vigorous, it holds many bacteria in check and prevents the injury which would be caused by their growth. Sour bread is also caused by microbes, which may be in the flour, the yeast or in the cracks and corners of the kneading trough. It is not possible to free flour from them, but it has been found that the high grades of flour are freer than are the poorer. The yeast may be kept almost entirely pure by good management, and the utensils should be frequently scalded to kill all germ life.

There are many recipes given for cultivation of yeast. Potatoes, flour, malt, sugar and rice are all recommended as constituents. Those most easily obtainable are potatoes and flour, and if care is taken in their preparation, potatoes seem to give the most satisfactory results, the disadvantage with them being that their cracks and eyes are difficult to free from bacteria, so plentifully found in earth. The skins should not be boiled with the potatoes because of the bactria already mentioned and because of a substance found on he inner surface of the skin, which has a tendency to give a bitter taint to the bread. If flour is used it is better to boil it to destroy the germ life and to gelatine the starch. When the highest grades of flour are used they are more likely to be free from bacteria, but poorer in diastase, hence a little sugar should be added, for this diastase has the power of converting starch into sugar. Hops are valuable because of their antiseptic properties, i. e., they prevent the growth of the bacteria, but do not interfere with the growth of the yeast plant and are non-injurious to the consumer. The hops should be heated in water, but not boiled, else a bitter juice is extracted. After two hours the hop leaves are strained off. By experiments at the O. A. C. it was found that the most advantageous proportion to use is 1 ounce hops in two gallons water. The hops give good results with either malt yeast or potato yeast. For home-baking the following receipts for brews are given:—

No. 1.	No. 2.
1 lb. potatoes.	½ oz. hops.
½ oz. hops.	½ lb. malt.
1 gal. water.	1 gal. water.

It is important that the brew should be sterilized by boiling, and then when cooled to 75 deg. or 80 deg. F., the yeast or a part of the old brew, which is pure, should be added. The vessel should expose as much as possible of the yeast to the air and the yeast should be frequently stirred by a stirrer kept in it.

An important point in bread-making is the effect of the process upon the digestibility of the product. There are ways of making bread to rise other than by the use of yeast. The gas causing the hollow globules in the bread is carbonic acid gas, and can also be formed by baking powder and water, or baking soda and sour milk, or by hydrochloric acid. When baking powder and water are used the undesirable product which remains in the bread is tartaric acid. When soda and butter-milk are used then lactic acid is formed. Both tartaric acid and lactic acid are injurious to health, and medical authorities have condemned them both when used as milk preservatives. But when hydrochloric acid is used in making aerated bread, the acid when mixed in the dough is neutralized, if used

in proper proportion, and turns into carbonic acid gas and common table salt, neither of which is injurious. But aside from the by-products, when any of these three substitutes for yeast is used, the bread or cakes are not so digestible, because the starch, sugar and gluten of the flour are not acted upon to the same extent by the quick-acting chemicals, as they are by the prolonged fermentation action of the yeast; consequently this further action must be performed by the digestive fluids.

Aerated bread was first made by Dr. Danglish, who kneaded the dough containing hydrochloric acid by mechanical means and under air-tight pressure. By taking it from the kneading-trough to the oven the pressure was removed and the gas escaping caused the bread to rise while being baked. The advantages of aerated bread are that it is quickly made, it is never sour or bad flavored because the undesirable germs had not time to grow, it is very tight and of uniform quality and good color, but for the reasons given above it has a raw, insipid flavor which causes the consumer to tire of it. Bread may also be made by the salt-rising method, but, as this is the result of a spontaneous fermentation, it is, therefore, a matter of chance whether good bread will be produced, although in places where this method has been employed there is less likelihood of failure, as the utensils and air of the rooms contain large numbers of the desirable germs.

Baking also has a great effect upon the digestibility of bread. The outside of the loaf may be subjected to a heat of 400 deg. F., while the interior is probably not hotter than boiling water. The starch on the exterior is changed by the heat into dextrin, a kind of sugar, which is entirely digestible. In making fancy breads that are glazed, steam is turned on the surface of dextrin for a moment, and the two form the sticky, shiny, substance seen on the loaf.

CARE OF MILK AND CREAM FOR CHEESE FACTORIES AND CREAMERIES.

Those who have had extensive practical experience in the manufacture of cheese and butter, are fully awake to the necessity for cleanliness in the production and handling of the raw material; no matter whether the whole milk is sent to the factory for cheese making, or the cream separated on the farm and then taken to the creamery, there is necessity for thorough cleanliness in the cooling of the milk and cream at all seasons of the year. The Dairy Instructors for the Province, the makers in the factories and creameries, and the wholesale merchants who buy and export the goods, are agreed in stating that there is no one point, in connection with the production and manufacture of milk into cheese and butter, which is of greater importance than the proper handling and cooling of the milk immediately it is drawn from the cow, and that it be kept cool and sweet until it reaches the place of manufacture. The great improvement of the raw material during the past two seasons is most gratifying. There is still room, however, for advancement in this respect.

The women of the farm, while not called upon to do so much of the dairy work as years ago, are still in closer touch with the dairy branch than other line of farming operations, and it is to them that we must look to give directions to those who do the practical work, as to proper methods in caring for and cleaning the utensils, cooling the milk, etc. Much of this work is now left to farm hands, and it is well known that the average man requires the direction of some cleanly, up-to-date woman, before he can be

depended upon to properly clean dairy utensils. The woman on the farm can do much to ensure the observance of approved methods, and as this report is read by large numbers of women living in the farming districts, we thought it well to publish herewith copies of notices sent out from the Dairy Branch re the production and care of cream and milk. We trust that those who read these notices will make it their business to see that the recommendations contained therein regarding the washing of utensils, washing and care of separators, cooling of milk, storing of cream, etc., are closely observed.

TO THE PRODUCERS OF CREAM.

This pamphlet has been prepared for the use of creamery instructors, sent out by the Provincial Department of Agriculture and the Dairymen's Associations, with a view to assisting them in inducing the patrons of creameries to use greater care in the production, handling and delivery of cream. There is, undoubtedly, much room for improvement in equipment and methods in many of the creameries. It has been stated, however, by well-known men in the trade and in the columns of the agricultural press, that the greatest weakness in our dairy methods to-day is a lack of raw material of the highest quality. This is particularly true of the raw material which is delivered at many of our creameries. It would be to the interest of all concerned to have the cream richer, and delivered sweet, every day, if possible.

The Objects of Instruction.

Instructors sent out by the Department are not employed as detectives, but devote their energies to instructing the maker how best to improve the quality of the butter and the producers how best to supply raw material of the desired quality. Their duties are largely of an educational character. Besides advising and assisting the maker in the best methods to insure a high class product, they will, in many cases, visit the premises of the producer with a view to giving instruction in:—

(*a*) The care of the separator and adjusting of the same;

(*b*) Best methods of cooling and caring for the cream;

(*c*) Necessity for maintaining a large supply of clean and cold water;

(*d*) Need of wholesome food for the cow, and liberal quantities of the same, etc.

The Department recognizes the necessity for united effort on the part of the producers of cream and the manufacturers of butter, if the dairymen as a body hope to secure a strong hold in the British market; and towards this end it has been thought well to present in printed form to the patrons of factories some advice and suggestions as to the production and care of cream. The relationship which should exist between patron and maker, and their respective responsibilities, should be better understood by both. The manufacturers, as well as the farmers, are in the business for the purpose of making money, and the farmer cannot hope to get a high price unless he delivers his cream in its best condition, neither can the manufacturer hope to get the best results unless he provides up-to-date machinery and follows the approved methods of manufacturing.

The points presented in this pamphlet will be *instruction* to some, while to many others they will be only a *reminder*.

Production of Cream.

In the profitable production of cream one of the essential factors is, that the cows kept shall give a liberal supply of milk, rich in butter fat. We have no hesitation in saying that any farmer would be well repaid for the time spent and expense incurred in making a thorough test of the individual cows in his herd, both for per cent. of fat in milk and total weight produced within the year. In the majority of herds, one or two of the best cows will be found to be returning a better profit than a half dozen of the poorer ones. Weed out the poor ones and encourage the money makers to still larger yields.

The scales and the Babcock test are just as essential to successful dairying as good food and proper management.

We wish chiefly to draw the attention of producers of cream to the necessity for following the best methods of caring for and delivering the cream to the manufacturer. It will not be out of place, however, to here remind the producer of the necessity for providing a liberal supply of suitable food and pure water for his cows at all times; also an abundance of salt. The farmer is compelled to feed sufficient to maintain his stock; it is in the judicious feeding of additional food that the profit lies. Avoid all musty food. Also see that the cows are not allowed access either to weedy fields, sloughs or filthy barn-yards.

Have the patrons made an honest effort to produce a good quality of cream and have it delivered in a clean, sweet condition? If so, they should *demand of the maker*:—

That he put up-to-date equipment in his creamery, that all utensils be kept scrupulously clean at all times, and that walls and ceilings of make-room be thoroughly cleaned and white-washed.

That the churns be thoroughly washed with lime water occasionally.

That the cold-storage be well aired and white-washed, and that all decayed wood be removed.

Is your creamery kept in this way?

On the other hand, he should *demand of the cream gatherers*:—

That samples be properly taken,—no favoritism shown, and that full justice be given to all.

That proper care be taken of the horses and wagon, and that the person and clothes of the driver be clean at all times.

The cream should be protected from the rays of the sun and kept as cool as possible in transit.

To the Producers.

In drawing the milk from the cow a suitable place should be provided for the work. If the cows are kept in the stable, the hair should be clipped from the hind quarters and tail. See that the stables are thoroughly cleaned and white-washed once or twice a year, and that they are provided with good ventilation. If the milking is done in the open, see to it that the milk is not exposed to dust and bad odors. Do not compel cows to go faster than a comfortable walk. The milking should be done quietly, quickly, thoroughly, regularly, and with clean, dry hands. A little vaseline rubbed on the hands will assist in making the operation easier.

A person suffering from any disease, or who has been exposed to a contagious disease, should remain away from cows and milk.

Do not use wooden or galvanized pails. Discard all rusty pails, cans, or stirring utensils.

Cream cans and pails should first be rinsed with warm water, then washed with hot water, in which a little of some good washing powder has been dissolved, and finally scalded with water as near boiling as possible and placed on their sides in a place where they will be surrounded by pure air and have plenty of sunlight. Always use a good fibre brush for washing dairy utensils and never use a cloth for either *washing or wiping*—The heat of a utensil that is properly scalded will readily dry it. The foregoing directions apply equally to the washing of all dairy utensils, such as pails, cans, separator bowls and their parts, etc.

Do not use a cloth to either wash or wipe utensils.

Separating Cream.

The day is past for the use of the shallow pan system for creaming milk. If you have not a separator then use the deep setting system. This demands an abundance of cold water, and a liberal supply of ice should be provided. The separator requires constant and careful attention. First, it must be placed on a firm foundation amid clean surroundings, well ventilated and well removed from stables and bad odors of all kinds. The milk should be run through it immediately after being drawn from the cow. Thoroughly clean the separator after each skimming, taking the bowl apart, washing scalding, and leaving to dry before again putting together. Clean the separator as soon as possible after using, as it washes easier and is less liable to contaminate the next batch of cream. In washing a separator bowl and its parts, follow the directions already given for the washing of dairy utensils. Do not heed the person who advises washing the separator only once a day or twice in two days.

Put a quart of warm or hot water in bowl before starting to separate. This helps the process of separation, prevents cream from lodging, cleans out any impurities, and warms up the bowl. Speed the handle to the number of revolutions indicated; or three to five revolutions more, to get a cleaner skimming and richer cream. Have the speed regular and uniform.

Skim each milking as soon as milked. There is additional loss in the skim milk, more work, and greater trouble when saving one milking over and skimming only once a day. The milk has to be cooled to keep sweet until skimmed, and then warmed again to get a thorough and clean separation. This additional heating and cooling tends to deterioration in quality of cream.

Cool the cream as it comes from the separator or immediately afterwards to a temperature below 60 degrees, and keep it there until called for, not mixing the different skimming until all is cooled. Remember never to mix cold and warm cream.

Provide a special box or tank for holdng the cans of cream and keep cold water and ice always around them, having the water in the tank to come up as high as the cream in the can.

Cream testing 30 to 35 per cent. fat gives better satisfaction to both patrons and maker. It will keep sweet longer, there is less bulk to look after, a larger yield of butter is secured and more skim milk is kept on the farm. Sweet, fresh cream of uniform quality, without bitter or other undesirable flavors, will be found most satisfactory to all concerned, and the patron will be repaid many times over for his extra trouble. Do not be misled by the belief that cream slightly sour will show a higher test and thus give you larger returns than sweet cream. Deliver your cream sweet, and see that the other producers do the same.

Variations in the test or richness of cream may be owing to numerous conditions:—Changes in temperature of milk when separating, changes in the speed of the separator bowl, variation in the amount of milk running through the separator in a given time, the amount of water or skim milk used in flushing out the bowl after separating, change in the richness of the milk, seasons of the year, lactation period of the cows, etc.

A thin cream may be obtained by too slow a speed, too heavy feed of milk into the bowl, too low a temperature of the milk, too much water or milk used in flushing out the bowl, or the regulation of the cream or skim-milk screw. A rich cream will be obtained by increasing the speed, reducing the flow of milk and raising the temperature.

Conclusions.—Flush out all bearings of machine once per week with kerosene, do not allow too much oil to run in bearings, just enough to lubricate well. Do not leave spoiled milk or cream around machines, but wash it up at once. It is business suicide to send good cream one day and poor the next. It means loss of trade and reputation. The flavor of the butter will be the same as the cream from which it is made; therefore, poor cream, poor butter, poor prices; good cream, good butter, good prices. The production of butter from cream gathered in Ontario is growing rapidly, and from present indications the output from year to year will be greater and greater. We appeal to the producers and manufacturers to do all they can to improve the quality in order that the industry may be placed upon a more substantial basis.

PRODUCTION AND CARE OF MILK FOR CHEESE FACTORIES.

Caring for Milk on the Farm.

The following notes were prepared by Prof. H. H. Dean, of the Ontario Agricultural College, and are worthy of careful study by every milk producer.

"The cows should be healthy and clean. Colostrum (Beistings) should not be sent to the factory. The stable and pasture should be clean, dry and free from bad odors and bad smelling weeds. The food should be clean, pure, sweet and wholesome. Cows giving milk should not be allowed to eat brewers' grains, distillery slops, turnips or tops, rape, mouldy meal, spoiled hay, or spoiled silage, cleanings from the horse stable, or anything which would tend to taint the milk.

"Either rock or common salt should be accessible to the cow at all times. Plenty of pure water ought to be within easy reach of milking cows. Foul, stagnant, or very cold water is injurious.

"Cows should be milked with clean, dry hands, after wiping the teats and udder with a damp cloth. Milk quietly, quickly, cleanly and thoroughly. The milk should be strained at once after milking, through a fine wire strainer, and also through two or three thicknesses of cheese cotton. The strainer needs special care in keeping it clean. The milk should be removed from the stable or milking yard as soon as possible after milking. It should be cooled at once to a temperature of 60 degrees, certainly below 70 degrees, by setting the cans in tanks of cold water, and by stirring the milk without exposing to the air more than is necessary, in order to facilitate cooling rapidly, and allowing animal odors to pass off readily. After the milk is

cooled to 60 degrees (and where Saturday night's and Sunday morning's milk is to be kept over until Monday morning, the cooling should be as low as 50 degrees in the hot weather), the cans may be covered with the lid or with a piece of damp, clean cotton. By leaving one end of the cotton in the water evaporation will tend to keep the milk much cooler. Night's and morning's milk should be kept separate as long as possible.

"If the milk be placed on a milk stand for some time before it starts to the factory, the stand should be covered and boarded in on the sides, and the whole neatly painted a white color. Milk should be protected from the rays of the sun, from the dust, and from the rain water. There is always a danger of getting undesirable flavors in the milk if it is exposed to the air under the ordinary farm conditions.

"If possible, the cans should be covered with a canvas cover while on the way to the factory, especially in hot, dusty weather. It is needless to say that the wagon, the man, the horses, and the harness should be clean, and a credit to the great dairy industry of Canada.

"Sour whey or buttermilk should not be put in the cans, as the acid destroys the tin and causes the can to rust. Rusty cans cause bad flavors in the milk. It is safer not to put whey in the milk can. A separate vessel should be used for this purpose, if the whey must be returned to the farm. If the whey must be returned in the milk can, it should be emptied at once upon its arrival at the farm, and the can thoroughly washed and aired in the sunshine before milk is put in it again.

"Do not use wooden pails. Discard all rusty pails, cans or stirring utensils.

"Milk cans and pails should first be rinsed in cool water, then washed with a brush and luke-warm water, in which a little sal soda has been dissolved, then scalded and placed on their sides in the sun.

"Do not use a cloth to either wash or wipe utensils.

"The two main points in caring for milk are to have everything clean, and to cool (especially the night's milk) as rapidly as possible to a temperature below 70 degrees, and to 50 or 60 degrees if possible."

"Be Clean." "Keep Cool."

FOODS.

Mrs. Lilian Gray Price.

To mention the question of foods would almost suggest nothing but a tiresome reiteration of a seemingly hackneyed subject, and yet to many of us, I am sure, it will seem as though we have mastered some few points in regard to foods in an indifferent manner, and there we have stopped. Progress in the definite knowledge of foods seems difficult, at least to those who are not devoting time to specially obtaining such knowledge.

If I were to follow my own inclination in the matter of this talk I should like to take up some points, perhaps not exactly correlated, which strike me as being of salient importance, and which have appealed to me, through years of Institute work, as being necessary for us to think about, and live up to in a more definite, progressive, up-to-date way.

Ever since the commencement of Women's Institutes we have heard of muscle and tissue, with their proteid, or muscle and tissue-building foods; fats, bones, heat and energy, and water, with all the various foods necessary for the proper nourishment of each, until we know that much at least, if we

know anything about food. But do we apply, or try to apply, our knowledge of such facts to every day life and living? If so, is it done in a scientific way, or is it just nice to know that meat will give us some muscle and tissue, and so on with the other foods? Such knowledge is more ornamental than useful, and is certainly superficial. What we need in our Institute work is a regular course of study, beginning with the simple principles and working through to the higher, till we feel that we have gained definite working knowledge, second only to that received at a regular Domestic Science College.

There is a change coming to us in the Domestic industry, and it is simply the change that has already come to every other industry, and to these in such large measure—the professionalizing of every kind of human work—the recognizing that the feeding of humanity is too important a business to be left in the hands of the everlasting amateur. No man nowadays would be willing that his wife should make his clothing, but he is perfectly willing that she should cook his meals, and ruin his digestion. He thinks because she is his wife she is able to cook, and he has taken her for better or worse, including the cooking, but people do not learn to cook simply by being born female.

If a man marries his cook or housekeeper, we say that is a mesalliance, but if he marries a wife and makes her a cook, what is the difference? To prevent such a condition we must make the study and practice of cooking and foods a science. We must understand the composition of the body, and by that I do not mean just to know the five different classes of substance we find in the body, but its composition in detail, with a definite knowledge of its organs, their shape, size and function, with the wonderful mechanism of our bodily apparatus. If we could study this in a systematic way, and master it, how much it would mean to us, as adults, and much more for the welfare of the children, who are fed very often much after the fashion of cramming chickens, but with not such good results.

The adulteration of food furnishes an interesting and valuable topic for study. How little we know of the manifold adulterations of our staple articles of diet. Our ordinary flour and cane sugar we know to be pure, but of how many food stuffs can the same be said? I hope the day is not far distant in Women's Institute work, when we shall map out a line of study in all these branches of the subject, as well as all other home topics, and follow it up systematically and conscientiously, and thus progressively.

It is highly important that we should study the Pure Food Bill, as the American people are carrying it out, to know what it attempts to do. We hear of women's organizations all over the land dealing with questions of the day relating to the social, political and economic welfare of the people, so we should seek to bring about improvements in the food of the people, both outside and inside the home. For instance, we only need to look at the public method of handling meat. It is carted here, there and everywhere in open waggons, often filthy, never very clean, along dusty roads and pavements, for miles, *uncovered*. In butcher shops I have seen the meat supply kept not more than 20 feet from a stable, and in many ordinary butcher shops, meat is displayed on a shelf outside, or in an open window *uncovered*. While the result is not exactly a manufactured adulteration, it is an adulteration of a very bad kind, and it is always well to wipe off any meat whatever, with a clean damp cloth. If you just treat a shank of meat to a sponge bath of clean water you will see what is meant. Now this is just an example, but why could we not as a body of women all over the Province, work quietly but systematically for the betterment of such conditions. This could easily be done in small places at least, where the butcher is amenable to the requests of his

customers. Would it not be a good thing for us to work for food improvements, or improved food conditions outside the home, in some such way as this?

Then inside the home we should try to improve, and professionalize our methods in the use of food. Emerson says,—"To know what to eat, when to eat, and how to eat, is a problem which humanity has not yet solved, although she has enriched herself with a myriad of wonderful inventions." However, one of the most hopeful signs of the times is the report which comes from teachers of household economics, in women's clubs, and in schools of Domestic Science, that women are now asking for information regarding food values and home sanitation, rather than recipes for new dishes as formerly. It must be remembered that the children of to-day are the people of tomorrow and the next generation, and the quantity and quality of their individual and vital efficiency in the future depends on the intelligence of those whose duty it is to-day to feed them, to clothe them, and above all, to educate them.

There is certainly much to be improved on in the feeding of children. Mothers, always loving, but sometimes ignorant, begin with the babe, bring it to the family table and give it a taste of everything that comes along. I have many times seen a baby of five months get a sour pickle to suck, or something equally bad to eat. One day at an hotel table I saw a child, eighteen months of age, partake of the following dinner:—Crackers and cheese, soup with broken bread, roast beef, potatoes, turnips, mince pie and a cup of tea. This is an example of a common fact. One day in speaking of proper food for a babe it was mentioned that for the first year of its life milk, and milk alone, is sufficient. A young married woman in the audience who had been getting red and angry for some moments, cried out, when she could contain herself no longer,—"My goodness, you would starve the poor little thing. They often cry because they are hungry, and I just give mine everything it wants and as much as it wants, and whenever it wants it." Such a woman is likely to learn better when it is too late.

Why does the farmer not begin with the young colt, and feed it everything that comes along? Why does he spend hours and hours in studying foods and feeding for his horses and cattle and pigs?

It pays—how much more, then, will it pay in the case of the human animal. Do let us be impressed with the necessity of this. Build a strong physical child, and the man will take care of himself.

There is a leaflet, "Food for the Growing Child," written by Mary D. Chambers, Lecturer, New York, and it is full of valuable information. She says,—"All things worth having are bought with a price. How many will think that sound health, good teeth and digestive organs, which can be trusted with anything in reason, may be considered fairly well insured by a carefully regulated diet during the first fifteen years of life." She divides the fifteen years into three periods—

1st. From 2 or 3 to 6 or 7. Years before regular school life.
2nd. From 6 or 7 to 12. Elementary School.
3rd. From 12 to 15 or 16. High School age.

For the first period the foods—Milk (1 qt. a day for most children), eggs not oftener than every other day, and never fried); custards; meat not more than once a day; broths, soups, cream, bread, butter, cereals, vegetables, fruits.

Foods forbidden under 7 years.—Cheese, corned beef, duck, goose, game, sausage, headcheese, salt fish, pork, veal and immature meats, hot bread, cake, except light sponge cake; pies, tarts and pastry. All uncooked vege-

tables, bananas, cherries and grapes, except when deprived of skin and seeds; in general all fruits out of season, and all stale or dried fruit. All fried foods and highly spiced and seasoned dishes, tea, coffee, candies.

2nd period.—Milk in abundance, meat once a day, fresh fish, bacon, egg legumes in purees only; cream, butter, whole wheat bread, crackers, cereals, sago, tapioca, light cake. Green vegetables, salads, fruits of all kind.

Foods forbidden.—Cheese, sausage, pork, salted and dried meats, salt fish, hot bread, pies, tarts, pastry, corn, radishes, rich gravies and dressings, tea, coffee. All highly spiced and seasoned dishes.

3rd period.—Same as for the second period.

This is the diet list given by an authority, and we can compare our ideas with these. Many might follow it with advantage.

The keynote throughout, for old and young alike, is common sense and moderation. I often think we use our reason and judgment in everything else, but the human race with all its learning cannot restrain itself in the matter of eating and drinking. By this we do not mean that we should confine ourselves to any one class of food to the exclusion of any other. A mixed diet is best. Civilized man turns to both the animal and vegetable world for his nutriment, and through a long course of adaptation his digestive organs have accommodated themselves to a mixed diet—meat, fruits, vegetables, nuts and sweets, in moderation. But for food cranks and food faddism, there is no excuse. The "middle of the high road" is the safest place for the average intelligent man and woman. Some real scientific knowledge, personal likes and dislikes, common sense, moderation, with cheerfulness at meals, fresh air and sunshine in abundance at all times, will carry healthy humanity pretty safely through this "vale of tears."

As a final word, it seems to me we might well take for our motto in regard to foods and eating, two clauses from the Pure Food League, in setting forth the objects of the organization. They are these:—(1) To consume food in a manner that will produce maximum nourishment with minimum ill effects, thus fitting each individual for largest happiness and fullest success so far as nutrition governs human life.

(2) To promote right living, better citizenship, the higher life of the household, correct methods in business, to an extent that eventually shall make the Canadian people the most perfect on earth, and be a guaranty of quality for Canadian products in the markets of the world.

FOOD ADULTERATION.

(An Address by Prof. R. Harcourt, O.A.C., Guelph, before the National Council of Women, assembled in Hamilton, October, 1906).

Among the early settlers in this country, when the food of the family was raised from the soil on which they dwelt, and the clothing made at their own firesides from the wool of their own sheep, adulterations and commercial frauds were unknown and unpractised. As our population increased and towns and cities came into existence, it was no longer possible for each householder to produce his own supplies and he was compelled to look to the butcher, the baker and the grocer for the food of which he and his family were in daily need. The accumulation of wealth has developed a demand for a more luxurious diet, and the more or less unnatural and artificial method of living has created a desire for more tempting and highly seasoned foods. Science, too, by furnishing us with a deeper knowledge of the component

parts of foods, has done its share in increasing the number and variety of the articles of our daily diet. Business men have not been slow in catering to the demands of the market, and have made full use of the facts furnished by science in preparing an endless variety of foods for specific purposes. Competition has still further augmented the list and has much to do with the manner in which they have been put on the market. For these and many other reasons the list of foods and condiments now available is almost endless. Many of these foods may be better than the old-fashioned materials; they may be more appetizing, more digestible, and more easily prepared for the table; but, because of their great variety, their prepared condition, the gullibility of the average housekeeper, and the keen competition in business, there are greater possibilities of adulteration and more incentive to fraud in the making up of our foods to-day than in the past.

That the public are awakening to the need of efficient food laws is evidenced by the fact that food legislation is receiving much attention both at home and abroad. In our own country the Dominion Parliament passed, in 1886, an Act dealing with the adulteration of foods, drugs, and fertilizers, and ever since has seriously tried to regulate the character and quality of the foods sold on our markets. The Act has been amended from time to time, but as the Dominion Adulteration Act stands to-day, it defines adulterated food to be: "(1) Such as is diluted with any substance which lowers its quality or strength; (2) such as has inferior or cheaper substances mixed with it, even although these may not be injurious to health; (3) such as may be deprived of any of its valuable constituents in whole or in part; (4) such as is an imitation of or sold under the name of another article; (5) such as is wholly or in part diseased or decomposed; (6) such as contains ingredients injurious to health; (7) if its strength or purity falls below the standard, or its constituents are not within the limits of variability fixed by the Act or by the Governor in Council; (8) if it is colored or coated or made to appear of greater value than it really is."

The Act, however, provided that these definitions as to the adulteration of food and drugs shall not apply: "(1) If any matter not injurious to health has been added in order that the article may be in a fit state for carriage or consumption, provided always it is conspicuously labelled as a mixture; (2) if the food or drug is a proprietary medicine, or is the subject to a patent in force, and is supplied in the state required by the specifications of the patent; (3) if the food or drug is unavoidably mixed with some extraneous matter in its process of collection or preparation; (4) if any articles of food not injurious to the health of the person consuming the same are mixed together and sold, or offered for sale as a compound, and if such articles are distinctly labelled as a mixture in conspicuous characters."

The claim is made by some manufacturers that the addition of a preservative to food does not properly constitute adulteration, because the preservatives added are of greater commercial value than the foods themselves. For instance, a preservative having a greater commercial value, weight for weight, than tomatoes may be used in making tomato catsup. It may be claimed that its addition actually increases the cost of the production. As a matter of fact, however, it permits the tomato pulp to be prepared in large quantities and preserved in barrels in a much less expensive way than can be done without its use. It is evident, therefore, that even though the preservative employed is more expensive than the substance to which it is added, the addition is really made for the purpose of cheapening the product. However, it is not for this reason that such a substance is properly called an adulterant, but, because it is added foreign substance and is neither a food nor

a condiment, and that in the present state of knowledge of the subject these chemical preservatives cannot be said to be harmless.

There are now on the market a large number of brands of commercial preservatives. They are frequently sold with the statement that they comply with all pure food laws, that they are entirely wholesome, and the claim is sometimes made that they are new products. The commercial preservatives usually consist of common substances of well known antiseptic action. The literature regarding the wholesomeness of the so-called chemical preservatives is not by any means agreed, but it is almost universally conceded that formaldehyde and fluorides are injurious, and the weight of evidence is decidedly adverse to the use of sulphurous acid as a preservative of meat products. Authorities, however, are by no means agreed as to the effect of salicylic acid, benzoic acid, and boric acid in the system. As much as one-half per cent. of the latter substance is allowed in butter sold on the British market; but I think all will agree that so long as there is any doubt as to the wholesomeness of any of the chemical preservatives, every effort ought to be made to prevent their use in foods. This is especially true of milk, which forms such a large part of the diet of infants and invalids.

As a result of the claims made by agents in house to house canvass, many housekeepers have been persuaded to buy small packages of what is known as "cold process" preserves. These preparations are sold under the claims mentioned above, and many housekeepers have been led to use them who would not had they known their true character. Unfortunately, they are sometimes accompanied by directions for the preparation of fruits without any heat, and in such cases the amount of preservative employed is often far in excess of that which even the advocates of food preservatives advise.

Fortunately our staple foods, such as the cereal grains, fresh meats, and fresh vegetables, are not adulterated. It is the higher priced prepared foods and condiments that are the most likely to be tampered with.

There is an impression in some quarters that flour is adulterated with gypsum or other mineral matter, or with corn flour, but these forms of adulteration are not practised in this country. Some of the special kinds of flour are not what they are supposed to be, and buckwheat flour and other special articles of that nature are frequently adulterated with cheaper cereal products; but at the present time there is probably no product on our market more free from adulteration than wheat flour.

During the last few years the number of breakfast foods on the market has been enormously increased. Some of these are simply the grain ground after the hull, etc., has been removed, and are true to name. Some, for which exaggerated claims are made, are partially cooked, and others are "predigested" by means of special treatment. There is some doubt regarding the advantage derived from the treatment given to this latter class of breakfast foods, for experiments seem to demonstrate that when thoroughly cooked one class of these foods is as well absorbed as another. Rumors have been circulated that arsenic and other poisonous substances are used in breakfast foods, but they have never been substantiated. The extravagant claims made by the manufacturers regarding the superior nutritive qualities of these foods are to be deplored, for the common oatmeal, cornmeal, wheat farinas, etc., furnish an equal amount of nutrition at far less cost. There is, however, no indication that there is much adulteration practised in the preparation of the breakfast foods.

The fresh meats on the market are rarely subject to adulteration. All varieties of meats that are sold in a finely comminuted state, such as chopped meat, Hamburg steak, and sausage, are likely, though not always, to have a

preservative added. Their use simplifies the keeping of such preparations. One of the most objectionable forms of adulteration practised in connection with meat is the sale of immature calves.

Canned vegetables constitute a class of products relatively free from adulteration by means of foreign substances. Imported peas may be colored with copper sulphate, but the home grown and canned vegetables are rarely colored, the possible exception being an inferior grade of tomatoes. It is said that sometimes saccharin is used as a sweetening material in canning corn.

The class of goods known as fruit products, including jams, jellies, marmalades, and dried and preserved fruits of every description are frequently sweetened with glucose as a substitute for cane sugar, and coloring matter is employed in order that the color of the finished articles may stand for a considerable time on the shelves in the light without deterioration. Apple juice obtained from peelings and cores, the by-products of the manufacture of dried apples, is frequently used in making the cheaper grades of jellies with starch used as a filler and gelatinizing agent. Sometimes exhausted apple residue from the manufacture of jelly is used for the preparation of jams, giving to the latter the seeds and other insoluble material of the fruit supposed to be present, while the soluble material is frequently made up of glucose.

The condimental sauces, spices, cocoas, chocolates, and ground coffees, are quite frequently adulterated with foreign substance, and the sauces, especially the catsups, are very commonly colored and preserved. In the home a single bottle of catsup may be kept open for a long time, and there is a demand for preserved goods in order that the bottle may be kept without deterioration of the contents for some time after it is opened.

In this country there is little or no adulteration of butter and cheese. Coloring matter is used in small quantities in both substances, but the principle governing the legislation regarding coloring of foods in general has not been ordinarily applied to the coloring of butter. There is a growing tendency to use boric acid as a preservative in butter, especially in that made for the export trade. Milk, as is well known, may be, and is too often, adulterated in a variety of ways. Preservatives are sometimes used in both milk and cream, a practice which should not be countenanced in any way, for, they are not only harmful in themselves, but their use obviates the necessity of care and cleanliness in handling milk and makes it possible to put a dirty unsanitary product on the market. Surely, in view of of the statistics on infant mortality, babies have difficulties enough in assimilating *pure* milk without having to struggle with preservative adulterants and all the filth they may help to cover.

The enforcement of the Food Adulteration Act is in the hands of the Dominion Inland Revenue Department. According to the provisions of the Act, any officer of the Department is empowered to procure samples of food from any person who has such in his possession for the purpose of sale, and may require such person to show him and allow him to inspect all such articles in his possession, and the place or places in which such articles are stored, and to furnish him such light or assistance as he requires and to give him samples of such articles on payment or tender of their value. This the vendor is bound to do or be liable to the same penalty as if he knowingly sold, or exposed for sale, adulterated articles knowing them to be such. After the purchase has been completed the officer must notify the seller or his agent of his intention to have the sample analyzed by the public analyst, and shall divide the sample into three parts and deliver one of these to the

seller if he requires it. The other two are to be sent to the public analyst and the Department of Inland Revenue, respectively.

In carrying out these directions the officer, after purchasing an article of food and informing the vendor of his intention to have it analysed, is frequently asked as to who will suffer if it is found to be adulterated, and how the vendor is to protect himself if he only sells the adulterated goods in the same condition as he receives them. The answer is, that all goods are supposed to be pure unless otherwise labelled, and that the vendor must suffer if he sells an adulterated article which is not conspicuously labelled as a mixture, or if he fails to secure the warranty from the manufacturer or dealer as provided by the Act.

From time to time the Department make collections of foods which they have reason to believe are being adulterated, and after making the examination, report in bulletin form. These bulletins are available to those interested in the work and help to keep the public informed regarding the purity of the various classes of foods. During the present year bulletins have been issued on the following subjects:—Canned Meats, Honey, Whole Milk, Skim Milk, Butter Milk and Cream, Maple Syrup and Sugar, Fruit Preserves, Commercial Extracts of Lemon and Patent Medicines and Headache Powders. These bulletins show that there is considerable adulteration of the nature previously mentioned practised in all these goods.

The question is sometimes asked, "How can I have foods which I think are adulterated analyzed?" The best way of having suspected adulteration investigated is by notifying the Deputy Minister of Inland Revenue that stated classes of foods are believed to be impure. If satisfactory representations are thus made by responsible persons, the matter will be taken up and thoroughly investigated. The Department prefer to have all samples for analysis collected in a legal way by their own inspectors; since only in such cases can they institute legal proceedings when adulteration is found. The Act, however, provides that individuals may have samples analyzed at their own cost. The results of such analysis are available to the individual in case he decides to prosecute, but the Department cannot in such a case be a party to the prosecution, except as a witness.

There is a growing demand for information on this important subject, and it is right that the public should be deeply interested in the nature of the substances placed in foods. Manufacturers should be compelled to label their goods in such a way that the consumer knows exactly what he is buying and can act accordingly. At the same time, there is an unfortunate tendency to exaggerate the amount and harmfulness of adulteration. There is an honest difference of opinion regarding the wholesomeness of preservatives and other substances added in the preparation of food, and the subject should be treated in a conservative manner. But certainly all cases of pure fraud should be severely dealt with.

There is great need of more education along the lines of the value of pure foods. At present there is a desire on the part of the general public for prepared or semi-prepared foods of a tasty and attractive appearance, and an apparent indifference to the need of a pure, wholesome and nutritious article. So long as this continues we cannot be surprised if business men strive to supply this demand. It costs more to produce pure milk, pure jam, jellies, etc., than it does to produce the impure article, and housekeepers should be willing to pay the price; but they have a perfect right to full assurance that the food is what it is represented to be. The consumer must be led to look deeper into the nutritive value and nature of the food used and to demand that it be pure and wholesome. Would it not be a good

work for the National Council of Women and the Ontario Women's Institutes to help spread reliable information regarding our common foods, and thus help to inspire mothers to see to it that the food placed before their children is the very best and purest that can be procured? Create the demand for nothing but the purest and the best and the trade will supply it.

The following clipping from *Good Housekeeping* will be of special interest in view of what Prof. Harcourt states in the preceding paper:—

"Investigations by R. O. Brooks, B.Sc., formerly State Chemist of New Jersey, reveals the astounding fact that of the sixty-two brands of flavoring extracts examined (all sold as pure, and at the usual prices for pure extracts), only twenty-six, or not quite forty-two per cent., were legally pure. Fewer still were of really high quality. This shameful condition of affairs is generally true, in many cases worse, with respect to other classes of food products sold in New York city, which are subject to adulteration. The recently enacted national pure food law is powerless to deal with this situation, as it has absolutely no jurisdiction or control over food products manufactured and sold in the same state or city. Only a *bona fide* honest state or municipal inspection of long duration by properly trained, experienced officials, or, better still, an organized public demand for pure food stuffs, such as *Good Housekeeping* is undertaking, can remedy the evil and bring the fifty to sixty per cent. adulteration of those products down to the usual normal of twenty to twenty-five per cent., as is the case in those states where there has been a rigid control of the quality of food stuffs sold for a score or more of years."

INVALID COOKERY.

Lillian F. Sheffield, Toronto.

The proper preparation of food is a very important factor both in the prevention and in the cure of disease. Statistics show that two-thirds of all disease is brought about by an error of diet, either by taking too little or by taking too much food, or by a diet that is not well balanced; that is, it does not contain the combination of food elements in the correct proportions. Also disease may be caused by certain germs or poisons entering the body in food or drink. Overeating may cause gout and diseases of the skin, kidneys, liver and other organs. Lack of fresh food may produce scurvy, and an improperly balanced diet often results in rickets. Diseases transmitted by infected milk are diphtheria, scarlet fever, typhoid and many others.

A nurse should understand the importance of the proper feeding of the patient. Care should be taken that the patient's wishes, wherever practicable, are carried out. His likes and dislikes should be observed and also his peculiarity of constitution, so that nothing may be offered him which he cannot assimilate. Food should be given at regular intervals as the appetite usually comes on at certain times, and if the meal is not forthcoming may disappear. The appetite of the conscious patient or that of the convalescent should be encouraged, and nothing done in any way to disturb it.

The sick room requires to be orderly, and no dishes, utensils or food should be allowed to stand about the room, either before or after using. All drink or food should be offered from scrupulously clean glasses or dishes. Dainty dishes, attractive food, and spotless napery ought to be used.

Stale or strong smelling food must be avoided. The nurse should taste the food before taking it to the patient, never in his presence, so that anything wrong may be rectified.

If the patient is weak, the food should be given in such form that he may obtain sufficient nourishment without becoming fatigued. If he is helpless, food may be given from a spoon or from a drinking cup with a spout, or by using a tube and allowing the patient to take food from a glass.

Judgment must be used in waking a patient to give food; sometimes sleep is more beneficial. If the patient is awakened and does not get to sleep soon after feeding, a cupful of warm milk or similar food may induce it.

In fever, the changes taking place in the body are increased while the amount of food assimilated is decreased. The appetite is diminished or lost entirely, therefore it requires tact on the part of the nurse to see that the patient receives sufficient nourishment. In order to nourish a fever patient it is necessary that the food be easy to take, easy to digest and easy to assimilate. Water should be given frequently, as thirst is increased during fever. Plain water is most suitable, but this may be varied in many ways. Lemonade, orangeade, barley water, oatmeal water, toast water and raisin water are all useful mediums through which water may be disguised.

Liquid food is usually ordered in fever cases. Milk is the best of the liquid foods, but as a rule it should be diluted and a small quantity of lime water added; barley water or oatmeal water may be mixed with it. Buttermilk and kumiss are also good. Eggs may be given raw or in the form of albumen water; also meat juices and broths may be used. Variety of broth should be offered in order to avoid monotony of diet. Strained vegetable broths are useful occasionally and gelatin preparations may be employed. Fruit juices are generally relished. The question of kinds of food should be decided by the physician, but the preparation of this food rests with the home nurse as a rule.

During convalescence the diet of the patient requires as much care and attention as it receives throughout the fever period. Often the patient develops a ravenous appetite, due to several weeks' milk diet, so that even greater care is necessary that the patient is given nothing but what is ordered by the physician.

The first addition to the fever dietary may be milk toast, milk and crackers, or junket, and if these are found to be good, other articles, such as soft boiled eggs and the soft part of oysters may be added. Thickened meat broths and finely scraped raw beef reduced to a pulp also lends variety.

*Children also require special diet, although many parents give their children everything they themselves eat.

(*See article by Mrs. Lilian Gray Price for list of foods suited to different ages.)

CARE OF THE FACE, HANDS AND HAIR.

By Mrs. F. W. Watts, Clinton.

The art of looking one's best by beautifying and improving the complexion is easily acquired if one can afford to devote a little time each day to that purpose. Close observation and good taste are necessary for even beauty to display itself to the best advantage. Beauty is a part of woman's wealth, strength and power, and the knowledge of how to procure, improve and preserve it is perfectly legitimate and should be extended.

In health the treatment of the skin is extremely simple, requiring only habitual cleanliness and daily baths. When we know that the skin is composed of three layers of coverings filled with minute pores to allow the escape of perspiration and other impurities, it must be quite clear that constant bathing and friction with a rough towel is necessary to preserve a healthy glow and tone to the system.

Soap should always be used, as the alkali of the soap unites with the oily exudations of the skin and helps to remove impurities. Care should be exercised in purchasing soap, and only a superior quality used. A teaspoonful of strong ammonia put in the bath will make it almost as refreshing as a dip in the ocean, is very cleansing, and is also valuable in removing any disagreeable odor arising from profuse perspiration.

Nothing helps more to insure a good complexion than the use of a cold bath every morning. No one who is not in the habit of taking one can imagine how greatly it conduces to the health, and to the freshness of the complexion. The body should be sponged all over for about two minutes, then rub with rough towels until the friction causes a warm glow to be felt.

Plenty of fresh air and exercise must be taken. An hour, at least, each day, should be devoted to walking. This brings all the muscles into action and promotes a healthy circulation.

Diet is another item to be considered. Use wholesome, nourishing food, avoiding greasy foods, rich pastrys and candies, all of which are enemies to a clear complexion. Those troubled with a dull, muddy complexion should use the meal bath. Sew bran or oatmeal in a little sack and use this as a washcloth, adding a little borax or ammonia to the water. Drink plenty of pure, fresh water, either hot or cold, and drink it every time you feel like it. The necessity for drinking water first thing in the morning and last thing at night cannot be impressed too strongly. It washes out the inside canals, thereby clarifying the blood by giving the food, when swallowed, a clear passage to travel through.

If freckles are constitutional you will find it hard to remove them; but, if caused by exposure to the sun and wind, try this remedy. Scrape about a dessertspoonful of horseradish into a cup of buttermilk, let stand twelve hours, strain and apply two or three times a day.

If the face has become roughened by the wind, apply a lotion of equal parts of rose water and brandy.

Here is an excellent recipe for "Skin Food:"

½ oz. each of spermaceti and white wax,
1 oz. each of cocoanut oil and lanoline,
2 oz. oil of sweet almonds.

Melt these in a granite pan set in another pan of water, take from the fire while still warm and add ½-oz. each of alcohol and elder flower water and twenty drops tincture of benzoin. Add a few drops of your favorite perfume and beat with a wire egg-beater until smooth and creamy. Will keep well if kept in a cool place, or you can make half the quantity.

Now for those wrinkles and crows' feet. Some of us have taken a closer look into the mirror to-day and the result was anything but satisfactory. We unwillingly admit that Father Time has been writing and telling a tale of the years that have passed. Now I will give you a few hints on how to cheat Father Time out of a few of his markings.

First cleanse the skin thoroughly with rain water as hot as can be comfortably used and good pure soap, then rinse in clear, tepid water and wipe on a soft towel. Now we are ready for the second step. Having on hand a

good cold cream (see recipe for "Skin Food") we will begin with the forehead. Anoint the skin liberally with the cream, then place fingers of the right hand on right temple and with fingers of left hand describe a circular motion, from right to left, beginning at the middle of the forehead and gradually working across to the left temple. Repeat this a dozen times, then reverse hands and use same movement on right side of forehead. Now for the laughing wrinkles at the corners of the eyes. Anoint well with the cream as before and smooth with the tips of the fingers outward and upward.

Now we turn our attention to the cheeks and see what we can do to cultivate a pleasing, rounded contour. Use cream as before, place tips of fingers at corners of mouth, smoothing upward and outward. If the cheeks are thin, massage gently with circular motion, if too fleshy, rub hard, which tends to make firm and reduce the flesh. The chin must have a little rotary motion all its own to preserve its firm roundness. For the lines coming around below the ear rub crosswise. If this treatment is persevered in the results will be most satisfactory.

Now a few words for the care of the hands. We all admire nice hands, and it is most important that the general well-being and cleanliness of the hands be carefully looked after. In the first place the hands should always be kept scrupulously clean, therefore should be frequently washed and dried thoroughly and rubbed briskly afterwards. Not attending to this causes them to chap, crack and become red. Wearing kid gloves at night softens the hands, but the gloves must be large enough to not bind in the least as this would interfere with the circulation. One should save the hands by wearing an old pair of gloves when taking out ashes, cleaning stoves, sweeping, and in all such work that permits of the wearing of gloves. Biting the nails spoils the shape of the finger tips. This habit should never be indulged in.

Equal parts of glycerine, lemon juice and rose water or witch hazel, with a few drops of tincture of benzoin, makes an admirable preparation for rubbing on the hands at night.

It is needless to repeat the oft-told tale of manicuring; so we will have a little talk about the hair. Nothing is more desirable or beautiful than a good head of hair. Indeed it seems to be a woman's crown of beauty. If the hair is harsh, dull-looking and thin, one of the elements of true beauty is lacking. In order to have heavy, handsome hair the scalp must be healthy and clean. Neglect of this frequently produces disease and renders the scalp liable to lose its tone and freshness. Once a month is enough to wash the hair under ordinary circumstances. If the hair is too oily use a little borax, ammonia or salts of tartar in the water. After washing, the scalp should be well rubbed with a coarse towel, or a soft brush may be used to restore a healthy action to the scalp and stimulate the natural secretions on which the hair depends for its vitality and color. Falling of the hair is the result of impoverished glands and a morbid condition of the scalp. What is required is some stimulant that will restore the vital forces of the glands. Sage tea is excellent for this purpose, as is also the following:— Olive oil, 2 oz.; bay rum, 2 oz.; tincture cantharides, ¼ oz.; aqua ammonia, ½ oz. This owes its virtue to the stimulating powers of the cantharides and ammonia, which rouse the dormant hair bulbs to action.

Here is another good hair tonic. Into a pint of bay rum put a level teaspoonful of fine table salt and twenty grains of quinine. Use every day with gentle massage till hair improves. A lotion, which it is claimed, will cure dandruff contains ten grains corrosive sublimate in five ounces distilled witch hazel, to be applied at night with a bit of absorbent cotton with very little rubbing.

To sum all up, if you wish to retain your beauty and health, rise early and take a cold bath, which stimulates the heart and gives a real, natural and beautiful complexion. It strengthens the nerves, too; gives one an erect carriage, and makes you feel as happy all day long as a little nigger boy in a newly emptied sugar cask.

THE ALL-ROUND, OR IDEAL WOMAN.

By Miss Blanche Maddock, Guelph.

This is the subject that has been discussed with interest from wise King Solomon's time to the present day. Allow me to present it (like the preachers) with a first, second and thirdly. First, then, what requirements are necessary for the "All-round woman?" Second, do our women of the present day reach the standard? Third, if not, how are we to reach the ideal standard?

What was the conception of the wisest man in the world of his ideal or all round woman? Note—It is wisdom, not ignorance, that exalts womanhood. Is it not true that in any age or nation the price of the ideal woman is above rubies? Solomon says that first she must have a pure, unselfish nature that will inspire confidence and trust. That is the first requisite for the perfect woman. She must be industrious; she must know how to work with her hands. Remember, these were the ideas of an aristocrat, a king. In the southern states to-day, and in certain circles in Canada, the definition of a lady would be, one who did not know how to work with the hands. A southern woman said a few weeks ago of another woman, "She is a perfect lady; she never made a bed or washed a dish in her life."

Then, too, according to this great wise man, a woman should understand something of the value of foods and the necessity for a change or variety of foods. The ideal housekeeper must not be content to serve up the same foods in the same way day after day. "She bringeth her food from afar." This woman is also a manager, she does not leave the care of her children and the care of her house entirely in the hands of the domestics; she superintends things herself. "She giveth meat to her household and a portion to her maidens." If this practice were carried out to-day, would it not go far to solve "the servant girl problem?" One cannot expect a maid to do the work of a house properly when the mistress has no system and all her plans are spasmodic and out of joint.

Next, our ideal woman must be a business woman. I have heard men say that a girl can scarcely remain a sweet, womanly woman if she is forced to go out into the world to earn her own living or come in contact with others in a business way. "The down is rubbed off" is a common expression. Solomon does not seem to think so; he says, "she considereth a field and buyeth it." Just think of it! A woman in early Jewish times, having enough money of her own—that she had made with her own efforts—earned herself, to invest in the real estate and dry goods business, and yet we find her considering a field and buying it, and examining her merchandise to see that it is good. But in order to do all this she must look after her health; "she girdeth herself with strength, she strengtheneth her arms," or in other words, she took physical culture. This was a busy woman; she led a busy, active life. The great weakness with the really busy woman to-day is, she forgets that she cannot continually make demands on her reserve strength without suffering from it sooner or later. Many women have laughed at the

very idea of their taking time for a cold bath in the morning or a few simple exercises, or even to take time to go to an open window or door, throw back the head and chest, and breathe in a few deep breaths of pure life-giving air before entering on the duties of the day.

Again, this "All-round woman" did not declare, as so many home women do to-day, that, if she looked after her home and her children, she had no time to attend meetings or help those less fortunate than herself. No! "She stretcheth out her hand to the poor; yea, she reacheth forth her hands to the needy." Again, Solomon's ideal was a woman that was fond of pretty dress and a pleasant social life. She was careful that her children and herself were properly and becomingly, and even elegantly, dressed. She was fond of bright, beautiful things, quite an up-to-date woman, but she knew where to draw the line; her mind was not entirely taken up with dress. We find that she was able to converse intelligently, "she opened her mouth with wisdom; and in her tongue is the law of kindness." Women are proverbial talkers, but oh! what wisdom is necessary for the "All-round woman" to meet every requirement. She must be able to answer the myriad questions that are continually troubling the minds of the little ones, who are just beginning to look into the great book of life, and are forever asking the meaning of this or that (to them) great mystery. She must have the right word in season ready for the growing son or daughter or young companion, and must ever be ready with the words of advice or sympathy for the overtaxed husband, father or brother. Then we find this Jewish ideal kept up with the times, she knew what was going on around her, she filled her mind and heart with beautiful thoughts and beautiful memories, that would cause her to rejoice in the time to come. But above all, "she looked well to the ways of her household." Her home was her chief consideration; business, social life, or charity work, were only adjuncts or accessories in preparing her for an ideal home maker. The result was that everyone with whom she came in contact loved her; her children were proud of her and her husband praised and honored her; what a beautiful life to look back upon.

> "We shape ourselves.
> The joy or fear of which the coming life is made,
> And fill our future atmosphere with sunshine or with shade.
> The tissues of the life to be, we weave in colors all our own,
> And in the field of destiny we reap what we have sown."

If this is a true description of the ideal woman, what about the woman of to-day? We must admit that in many respects she has fallen far short. We have some of the traits, that Solomon has described, in all women, but the difficulty is to find all these traits in one woman. This is the day of specialties; we seem to have specialized women, women who go to one extreme or the other. We have, on the one hand, women who work; work from early in the morning till late at night, but who have no time to look after their health; no time to dress prettily or have any social life. On the other hand, there are women who delight in beautiful clothes, but who (figuratively speaking) never put their hands to the distaff, or in other words, women who are utterly dependent upon others for the making of their clothes. I believe that one of the most important branches of a girl's training in a Domestic Science school (such as the Macdonald Institute) is the "Home Art's Course," where young women are taught the value of the different fabrics, the combining of colors, and the designing and making of artistic costumes.

One great reason for the large number of bachelor men and bachelor maids to-day is the fact that young men cannot afford to marry the average fashionably dressed young lady, and keep up the establishment that she would require. Nor is a girl willing to give up a good salary and a fashionable dressmaker in order to settle down in a small house, do her own work, and make her own dresses.

It is true that conditions have changed since Solomon's time, and social requirements are very different, but it is equally true that any change that tends to undermine the home is striking a death-blow at the future welfare of the nation.

What, then, is to be done? I would reply, train the young girls from infancy to be self-reliant, to understand the value of time. (I have known girls to take one hour every day to dress their hair, and nearly another to dress up for the street or to receive company.) It is only by using every moment, by putting sixty minutes work into fifty, that we can hope to have time for rest or self-improvement, or for stretching our hands out to the needy.

But in order to have all-round ideal women in the future, the health of the girls must be considered. Accustom them to breathe pure bracing air, to take plenty of exercise; to eat plain well-cooked food, and go to bed early. Teach them to make their own dresses and trim their own hats. Teach them the value of truth by setting the example of truthfulness. Not long ago I was in a home at supper time. The little three-year-old girl asked for some butter on her bread. The father said to wait until it was passed, but she persisted in having it at once. He at last took the bread from her, rubbed his dry knife over it, turned it upside down, and told her the butter was on the other side of it. The child turned it over with the remark, "You tant fool me, Daddy." Then, also, one cannot become an "All-round woman" without filling the mind, while a growing girl, with beautiful thoughts. Some one has said, "If a girl was plain looking at sixteen, it was probably not her fault, but a woman that was plain looking at sixty had herself to blame." To sum up, the "All-round woman" must teach her heart to open to every need, must train her head to think and plan for the good of others, and her hands to carry out the behests of heart and head.

SUMMER SERIES OF WOMEN'S INSTITUTE MEETINGS, 1906.

DIVISION 1—Dr. Annie Backus, Aylmer; Miss Isabel Murray, St. Thomas.

1	Canfield, McDonald's Hall	Haldimand	May 24
2	South Cayuga	Haldimand	" 25
3	Caledonia, Town Hall	Haldimand	" 26
4	Selkirk, Workmen's Hall	Haldimand	" 28
5	Cheapside, Town Hall	Haldimand	" 29
6	Nanticoke, Town Hall	Haldimand, (afternoon)	" 30
7	Sandusk, Mrs. Tyrell's House, (afternoon). School House, (evening)	Haldimand	" 31
8	Jarvis, Workmen's Hall	Haldimand	June 1
9	Springvale, Town Hall	Haldimand	" 2
10	DeCewsville, Town Hall	Haldimand	" 4
11	Clanbrassil, Presbyterian Church	Haldimand	" 5
12	York, Town Hall	Haldimand	" 6
13	Windham Centre, Town Hall	N. Norfolk	" 7
14	Courtland, Town Hall	N. Norfolk	" 8
15	Simcoe, Home Circle	N. Norfolk	" 9
16	Cathcart, Forester's Hall	S. Brant, (afternoon)	" 11
17	Burford, Rutherford's Hall	S. Brant	" 12
18	Mohawk, Residence	S. Brant, (afternoon)	" 13
19	Scotland, Residence	S. Brant, (afternoon)	" 14
20	Ohsweken, Six Nation's Council House	S. Brant, (afternoon)	" 15
21	Onondaga, Township Hall	N. Brant	" 16
22	Tranquility & Moyle, Tranquility S. H	N. Brant, (afternoon)	" 18
23	Paris, Forester's Hall	N. Brant, (afternoon)	" 19
24	St. George, Library Hall	N. Brant	" 20
25	Sheridan, Town Hall	Halton, (afternoon)	" 21
26	Trafalgar, Township Hall	Halton	" 22
27	Palmero, Temperance Hall	Halton	" 23
28	Nelson, Town Hall	Halton, (afternoon)	" 25
29	Appleby, Town Hall	Halton	" 26
30	Burlington, Town Hall	Halton, (afternoon)	" 27
31	Milton, R. T. Hall	Halton, (afternoon)	" 28
32	Hornby, Orange Hall	Halton, (afternoon)	" 29
33	Kilbride, Hall	Halton, (afternoon)	" 30
34	Campbellville, Temperance Hall	Halton	July 2
35	Nassagaweya, Hall	Halton, (afternoon)	" 3
36	Acton, Home of Mrs. R. Wallace	Halton, (afternoon)	" 4
37	Georgetown, Town Hall	Halton	" 5

DIVISION 2—Mrs. Colin Campbell, Windsor; Mrs. Gertrude Carter, Guelph.

1	Grimsby, Town Hall	Lincoln	May 30
2	Smithville, Mrs. Kettle's. (afternoon) Agricultural Hall, (evening)	Lincoln	" 31
3	Beamsville, Reception Hall	Lincoln	June 1
4	Jordan Station, Victoria Hall	Lincoln	" 2
5	Allanburg, Town Hall	Welland, (afternoon)	" 4
6	Welland	Welland, (afternoon)	" 5
7	Sherkstone, Mrs. Merner Shupe (afternoon). Mrs. Amos Sherk (evening)	Welland	" 6
8	Ridgeway, Town Hall	Welland	" 7
9	Stevensville, Johnston's Hall	Welland, (afternoon)	" 8
10	Marshville, Town Hall	Monck	" 9
11	Winger, Coleman's Hall	Monck	" 11
12	Wellandport, Misener's Hall	Monck	" 12
13	Winona, Institute Hall	S. Wentworth, (afternoon)	" 13
14	Stoney Creek, Institute Hall	S. Wentworth	" 14
15	Tapleytown, St. George's Hall	S. Wentworth	" 15
16	Blackheath	S. Wentworth, (afternoon)	" 16
17	Binbrook, Hall	S. Wentworth	" 18
18	Hannon	S. Wentworth	" 19
19	Glanford, Temperance Hall	S. Wentworth	" 20
20	Carluke	S. Wentworth	" 21
21	Ancaster, Liberal Club Rooms	S. Wentworth	" 22
22	Jerseyville, Wait's Hall	S. Wentworth, (afternoon)	" 23
23	West Flamboro, Mrs. W. Betzner's	N. Wentworth	" 25
24	Rockton, Town Hall	N. Wentworth	" 26
25	Westover, Odd Fellows' Hall	N. Wentworth	" 72

SUMMER SERIES.—*Continued.*

DIVISION 3—Mrs. A. Kinney, Grandview, May 25—June 22; Miss L. Rose, Guelph, May 52—29; Dr. McMurchy, May 30; Miss S. A. Morris, Toronto, June 1—5; Miss M. Govenlock, Seaforth, June 6—22.

1	Mimico	W. York, (afternoon)	May 25
2	Weston, Town Hall	W. York, (afternoon)	" 26
3	Elia, Mrs. Snider	W. York, (afternoon)	" 28
4	Maple, Public Library	W. York, (afternoon)	" 29
5	Woodbridge, Orange Hall	W. York	" 30
6	Kleinburg, Temperance Hall	W. York	" 31
7	Ballycroy, Sloan's Hall	S. Simcoe	June 1
8	Thornton, Temperance Hall	S. Simcoe	" 2
9	Churchill, Orange Hall	S. Simcoe	" 4
10	Cookstown, Jebb's Hall	S. Simcoe	" 5
11	Wyebridge, Orange Hall	C. Simcoe, (afternoon)	" 6
12	LaFontaine, Mrs. John McMillan	C. Simcoe, (afternoon)	" 7
13	Wyevale, Orange Hall	C. Simcoe	" 8
14	New Flos, Mr. Hisey's House	C. Simcoe	" 9
15	Sunnidale Corners, Mill's Hall	W. Simcoe	" 19
16	Batteau	W. Simcoe	" 11
17	Duntroon, Bridge's Hall	W. Simcoe	" 12
18	Singhampton, Grant's Hall	W. Simcoe	" 13
19	Creemore, May's Hall	W. Simcoe	" 15
20	Everett, Orange Hall	W. Simcoe	" 16
21	Horning's Mills, Methodist Church	Dufferin	" 18
22	Shelburne, Town Hall	Dufferin	" 19
23	Camilla, Harshaw's Hall	Dufferin	" 20
24	Laurel, Methodist Church	Dufferin	" 21
25	Orangeville, St. Andrew's Church	Dufferin	" 22

DIVISION 4—Miss Isobel Rife, Hespeler; Miss Isabel Pease, Toronto.

1	Meaford, Council Chamber	N. Grey	May 30
2	Annan, Grange Hall	N. Grey	" 31
3	Kemble, Library Hall, (afternoon) Brown's School House, (evening)	N. Grey	June 1
4	Kilsyth, Town Hall	N. Grey	" 2
5	Desboro, Town Hall	N. Grey, (afternoon)	" 4
6	Chatsworth, Mrst L. H. Collins	N. Grey	" 5
7	Massie, Temperance Hall	N. Grey, (afternoon)	" 6
8	Owen Sound, W. C. T. U	N. Grey, (afternoon)	" 7
9	Brookholm, School House	N. Grey, (evening)	" 7
10	Hopeville, Allen's Hall	C. Grey	" 8
11	Priceville	C. Grey	" 9
12	Flesherton, Mrs. P. Teeter	C. Grey	" 11
13	Williamsford, Hall	C. Grey	" 12
14	Walter's Falls, Meth. Parsonage	C. Grey	" 13
15	Kimberley, Public Hall	C. Grey	" 14
16	Vandeleur, Forester's Hall	C. Grey	" 15
17	Badjeros, School House	C. Grey	" 16
18	Feversham, Agricultural Hall	C. Grey	" 18
19	Ravenna, Town Hall	C. Grey	" 19
20	Heathcote, Orange Hall	C. Grey	" 20
21	Allenford, Orange Hall	W. Bruce, (afternoon)	" 21
22	Tara, Council Chamber	W. Bruce	" 22
23	Pt. Elgin, Town Hall	W. Bruce	" 28
24	Paisley, Council Chamber	C. Bruce	" 25
25	Walkerton	S. Bruce	" 26
26	Holyrood	S. Bruce	" 27

DIVISION 5—Miss L. Shuttleworth, Guelph; Mrs. F. W. Bates, Broad Ripple, Ind.

1	Holstein	S. Grey	May 29
2	Dromore	S. Grey	" 30
3	Durham	S. Grey, (afternoon)	" 31
4	Elmwood	S. Grey, (afternoon)	June 1
5	Clifford, Odd Fellow's Hall	Union, (afternoon)	" 2
6	Harriston, Town Hall	Union, (afternoon)	" 4
7	Drayton, Council Chamber	W. Wellington, (afternoon)	" 5

SUMMER SERIES.—*Continued.*

8	Moorefield, Clogg's Hall	W. Wellington, (afternoon)	"	6
9	Palmerston, Anderson's Hall	W. Wellington, (afternoon)	"	7
10	Glenallan, Knox Church	W. Wellington, (afternoon)	"	8
11	Alma	W. Wellington, (afternoon)	"	9
12	Arthur, Town Hall	E. Wellington	"	11
13	Kenilworth, Orange Hall	E. Wellington	"	12
14	Mount Forest, Hall	E. Wellington	"	13
15	Conn	E. Wellington	"	14
16	Damascus, Township Hall	E. Wellington	"	15
17	Grand Valley, Orange Hall	E. Wellington	"	16
18	Belwood, Town Hall	C. Wellington, (afternoon)	"	18
19	Metz	C. Wellington, (afternoon)	"	19
20	Orton, Town Hall	C. Wellington, (afternoon)	"	20
21	Ospringe, Swackhamer's Hall	C. Wellington, (afternoon)	"	21
22	Marsville, Anthony's Hall	C. Wellington, (afternoon)	"	22
23	Coningsby, School House	C. Wellington, (afternoon)	"	23
24	Hillsburg, Town Hall	C. Wellington, (afternoon)	"	25
25	Erin, Workmen's Hall	C. Wellington, (afternoon)	"	26

Division 6. Miss Bertha Duncan, Emery; Mrs. F. W. Watts, Clinton.

1	Oxford Centre, Methodist Church	S. Oxford (afternoon)	May	29
2	Currie's Crossing, Methodist Church	S. Oxford	"	30
3	Burgessville, Baptist Church	S. Oxford (afternoon)	"	31
4	Springford, Baptist Church	S. Oxford	June	1
5	Tillsonburg, Home Circle Room	S. Oxford	"	2
6	Brownsville, Methodist S. S.	S. Oxford (afternoon)	"	4
7	Mount Elgin, Forester's Hall	S. Oxford (afternoon)	"	5
8	Ingersoll, Town Hall	S. Oxford (afternoon)	"	6
9	Folden's Corners, Methodist Church	S. Oxford (afternoon)	"	7
10	Beachville, Library Hall	S. Oxford (afternoon)	"	8
11	Thamesford, Rectory	N. Oxford	"	9
12	Kintore, Forester's Hall	N. Oxford	"	11
13	Innerkip, Forester's Hall	N. Oxford	"	12
14	Drumbo	N. Oxford	"	13
15	Bright or Ratho	N. Oxford	"	14
16	Hickson, Forester's Hall	N. Oxford	"	15
17	Tavistock, Kalbfleisch's Hall	S. Perth	"	16
18	Stratford	S. Perth	"	18
19	Staffa, Town Hall	S. Perth	"	19
20	Exeter, Town Hall	S. Huron	"	20
21	Bayfield, Town Hall	S. Huron	"	21
22	Clinton, Council Chamber	W. Huron	"	22
23	Holmesville, Wilson's Hall	W. Huron (evening)	"	23
24	Ripley	C. Bruce	"	25
25	Kincardine	C. Bruce	"	26
26	Ethel, Township Hall	E. Huron	"	27
27	Gorrie, Town Hall	E. Huron	"	28
28	Fordwich, Forester's Hall	E. Huron	"	29

Division 7. Miss S. Campbell, Brampton, May 29—June 29; Mrs. Lilian Gray Price, Toronto, May 29—June 1; Miss M. Stewart, Toronto, June 2—29.

1	Paisley Block, Mrs. D. Sorby's	S. Wellington (afternoon)	May	29
2	Winterbourne, Lecture Room	N. Waterloo	"	30
3	St. Jacob's	N. Waterloo	"	31
4	Hawkesville	N. Waterloo	June	1
5	Wellesley, Town Hall	N. Waterloo (afternoon)	"	2
6	Breslau, Mrs. Menno Shantz	S. Waterloo (afternoon)	"	4
7	Hespeler	S. Waterloo (afternoon)	"	5
8	Blair, Mrs. Telts	S. Waterloo (afternoon)	"	6
9	Galt, I.O.F. Hall	S. Waterloo (afternoon)	"	7
10	Branchton, Forester's Hall	S. Waterloo (afternoon)	"	8
11	Ayr, McGeorge Hall	S. Waterloo (evening)	"	9
12	New Dundee, School House	S. Waterloo (afternoon)	"	11
13	Haysville, Public Hall	S. Waterloo (evening)	"	12
14	Bethany, No. 5 School House	S. Wellington (afternoon)	"	13
15	Aberfoyle, Hall	S. Wellington (afternoon)	"	14
16	Killean, School House	S. Wellington (afternoon)	"	15
17	Brampton, Town Hall	Peel	"	16
18	Streetsville, Hall	Peel	"	21

SUMMER SERIES.—*Continued.*

19	Chelthenham	Peel	"	22
20	Inglewood, Town Hall	Peel	"	23
21	Belfountain	Peel	"	25
22	Alton, Hall	Peel	"	26
23	Caledon, Hall	Peel	"	27
24	Bolton, Council Chamber	Peel (afternoon)	"	28
25	Malton, Mrs. A. Walker's	Peel (afternoon)	"	29

Division 8. Miss G. Gray, Toronto, May 23—June 28; Mrs. Helen Wells, Syracuse, N.Y., May 23—June 16; Miss L. Reynolds, Scarboro Junction, June 21—28.

1	Springfield, Stewart's Hall	E. Elgin	May	23
2	Aylmer, Town Hall	E. Elgin	"	24
3	Port Burwell, Town Hall	E. Elgin	"	25
4	Sparta, Hall	E. Elgin	"	26
5	Dutton, Town Hall	W. Elgin	"	28
6	Rodney, Town Hall	W. Elgin (afternoon)	"	29
7	Highgate	E. Kent	"	30
8	Irwin, Union Hall	W. Kent	"	31
9	Cedar Springs, Town Hall	W. Kent	June	1
10	Port Alma, Mrs. G. H. Dawson's	W. Kent	"	2
11	Coatsworth, Town Hall	W. Kent	"	4
12	Wheatley, Gibson's Hall	W. Kent	"	5
13	Valetta, Town Hall	W. Kent	"	6
14	Tilbury, Mather's Hall	W. Kent	"	7
15	Comber, Town Hall	N. Essex	"	8
16	South Woodslee, Matson's Hall	N. Essex	"	9
17	Essex, Town Hall	N. Essex	"	11
18	Brigden, McKenzie's Hall	W. Lambton	"	12
19	Oil Springs	W. Lambton	"	13
20	Wyoming, Oddfellow's Hall	E. Lambton	"	15
21	Strathroy, Town Hall	W. Middlesex (afternoon)	"	16
22	Appin, Town Hall	W. Middlesex (afternoon)	"	18
23	Coldstream, Town Hall	N. Middlesex	"	19
24	Beechwood, Orange Hall	N. Middlesex	"	20
25	Parkhill, Town Hall	N. Middlesex	"	21
26	Greenway, Town Hall	N. Middlesex	"	22
27	West McGillivray, Town Hall	N. Middlesex	"	23
28	Ailsa Craig, Town Hall	N. Middlesex	"	25
29	Forest	E. Lambton	"	26
30	Sylvan	N. Middlesex	"	27
31	Hampstead	N. Perth	"	28

Division 9. Mrs. D. McTavish, North Bruce; Miss L. Sheffield, Toronto.

1	Thornhill, Mrs. W. H. Clubine	E. York	May	29
2	Ellesmore	E. York	"	30
3	Box Grove — Mrs. David Break	E. York (afternoon)	"	31
	Box Grove — Temperance Hall	E. York (evening)	"	31
4	Markham	E. York	June	1
5	Victoria Square, Hall	E. York	"	2
6	Stouffville, Council Chamber	E. York	"	4
7	Uxbridge, Market	N. Ontario (afternoon)	"	5
8	Oakwood, Town Hall	W. Victoria (afternoon)	"	6
9	Lindsay	W. Victoria	"	7
10	Cambray	W. Victoria (afternoon)	"	8
11	Fenelon Falls, Dickson's Hall	E. Victoria (afternoon)	"	9
12	Bobcaygeon, Public Library	E. Victoria (afternoon)	"	11
13	Omemee, Hall (near Bank)	E. Victoria (afternoon)	"	12
14	Mount Pleasant, Temperance Hall	E. Durham (afternoon)	"	13
15	Bailieboro, Church Basement	E. Durham (afternoon)	"	14
16	Millbrook, Town Hall	E. Durham (evening)	"	14
17	Garden Hill, Forester's Hall	E. Durham	"	15
18	Lakefield	W. Peterboro	"	16
19	Warsaw, Town Hall	E. Peterboro	"	18
20	Springbrook, Forester's Hall	N. Hastings	"	19
21	Wellman's Corners, Orange Hall	N. Hastings	"	20
22	Queenston, Orange Hall	N. Hastings	"	21
23	Tweed, Town Hall	E. Hastings	"	22
24	Little Britain, Temperance Hall	W. Victoria (afternoon)	"	23

SUMMER SERIES.—*Continued.*

DIVISION 10.—Miss Bella Millar, Guelph, May 30—June 25; Miss L. Reynolds, Scarboro Junction, May 30—June, 9 ; Mrs. W. Purves, Columbus, June 11—26.

1	Bowmanville, Council Chamber	W. Durham (afternoon)	May	30
2	Hampton, S. O. E. Hall	W. Durham (afternoon)	"	31
3	Solina	W. Durham (evening)	"	31
4	Nestleton, Mrs. A. H. Veal's	W. Durham (afternoon)	June	1
5	Greenbank, Temperance Hall	S. Ontario (afternoon)	"	2
6	Columbus, Purves' Office	S. Ontario	"	4
7	Kinsale, Hall	S. Ontario	"	5
8	Whitby, Council Chamber	S. Ontario (afternoon)	"	6
9	Hagerman's Cors.' Dissoll's School	W. Northumberland (afternoon)	"	7
10	Cobourg,	W. Northumberland (evening)	"	7
11	Gore's Landing, Public Library	W. Northumberland (afternoon)	"	8
12	Fenella, Temperance Hall	W. Northumberland	"	9
13	Brighton, Brick School House	E. Northumberland (afternoon)	"	11
14	York Road, Stone School House	E. Northumberland (afternoon)	"	12
15	Wooler, Methodist Church	E. Northumberland (afternoon)	"	13
16	Gilbert's School House	W. Hastings (afternoon)	"	14
17	Harder's School House	W. Hastings (afternoon)	"	15
18	Frankford, Hall	W. Hastings (afternoon)	"	16
19	Wallbridge, Town Hall	W. Hastings (afternoon)	"	18
20	Turner's	W. Hastings (afternoon)	"	19
21	Foxboro	E. Hastinings	"	20
22	Belleville	E. Hastings	"	21
23	Melrose, Town Hall	E. Hastings	"	22
24	Adolphustown, Town Hall	Lennox	"	23
25	Stella	Amherst Is	"	25

DIVISION 11. Miss Laura Rose, Guelph. (Special Northern Series for Organization).

1	Fort Frances	Rainy River	June	6
2	Crozier	Rainy River	"	7
3	Devlin	Rainy River	"	8
4	Emo	River River	"	9
5	Barwick	Rainy River	"	11
6	Stratton	Rainy River	"	12
7	Rapid River	Rainy River	"	13
8	Rainy River	Rainy River	"	14
9	Kenora	Rainy River	"	18
10	Eagle River, School House,	Rainy River	"	19
11	Oxdrift, School House	Rainy River	"	20
12	Dryden, Town Hall	Rainy River	"	21
13	Murillo, Town Hall	Thunder Bay	"	22
14	Papoonge, School House No. 1	Thunder Bay	"	23
15	Stanley, School House No. 2	Thunder Bay	"	25
16	Hymers, School House	Thunder Bay	"	26
17	O'Connor	Thunder Bay	"	27
18	Bishop's Mills, (afternoon)	Thunder Bay	"	28
19	Ouimet, School House	Thunder Bay	"	30
20	Wolf River, Dorion School House	Thunder Bay	July	2

Temiscamingue District.

21	Haileybury, Orange Hall		July	5
22	New Liskeard, Orange Hall		"	6
23	Hillview, School House		"	7
24	Milberta Newton's Hall		"	9
25	Uno Park, School House		"	10
26	Hanbury, School House		"	11
27	Thornloe		"	13
28	Earlton, School House		"	14
29	Heaslip, School House		"	16
30	Hilliardtown, School House		"	17
31	Judge, School House		"	18

SUMMER SERIES.—*Concluded.*

Division 12. Miss B. Maddock, Guelph. (Special Northern Series for Organization).

1	Iron Bridge, Orange Hall	E. Algoma	June	6
2	Goldenburg, School House	E. Algoma	"	7
3	Sowerby, Maccabee's Hall	E. Algoma	"	8
4	Livingstone Creek, School House	E. Algoma	"	9
5	Little Rapids School House	E. Algoma	"	11
6	Alma Heights, School House	E. Algoma	"	12
7	Desbarats	N. Shore Algoma	"	13
8	MacLennan	N. Shore Algoma	"	14
9	Bar River	N. Shore Algoma	"	15
10	Echo Bay	N. Shore Algoma	"	16
11	Tarantorus, School House	C. Algoma	"	18
12	West Korah, School House	C. Algoma	"	19
13	Base Line, School House	C. Algoma	"	20
14	Goulais Bay, School House	C. Algoma	"	21
15	East Korah, School House	C. Algoma	"	22
16	Walford	E. Algoma	"	15
17	Warren Town Hall	W. Nipissing	"	26
18	Sturgeon Falls, Town Hall	W. Nipissing	"	27
19	North Bay, Widdifield Hall	W. Nipissing	"	28

Division 13. Mrs. Lilian Gray Price, Toronto. (Special Northern Series for Organization).

1	Reay, School House	S. Muskoka	June	4
2	Germania, Wise's School House	S. Muskoka	"	5
3	Purbrook, School House	S. Muskoka	"	6
4	Macauley, W. C. Denniss' Grove	S. Muskoka	"	7
5	Baysville Town Hall	S. Muskoka	"	8
6	Bardsville, School House	S. Muskoka	"	9
7	Port Carling, Town Hall	Port Carling	"	11
8	Brackenrig, School House	Port Carling	"	12
9	Ufford	C. Muskoka	"	13
10	Raymond	C. Muskoka	"	14
11	Allansville, Allansville House	C. Muskoka	"	15
12	Utterson Town Hall	C. Muskoka	"	16
13	Callander, White's Hall	E. Parry Sound	"	18
14	Powassan, Stewart's Hall	E. Parry Sound	"	19
15	Nipissing, School House	E. Parry Sound	"	20
16	Restoule, School House	E. Parry Sound	"	21
17	Loring Russell Hall	E. Parry Sound	"	22
18	Arnstein, School House	E. Parry Sound	"	23
19	Golden Valley School House	E. Parry Sound	"	25
20	Commanda, School House	E. Parry Sound	"	26
21	Trout Creek, Trussler's Hall	E. Parry Sound	"	27
22	South River, Vincent's Hall	E. Parry Sound	"	28
23	Sundridge, Orange Hall	E. Parry Sound	"	29
24	Burk's Falls, Sharp's Hall	E. Parry Sound	"	30
25	Midlothian, School House	E. Parry Sound	July	2
26	Doe Lake, School House	E. Parry Sound	"	3
27	Kearney	E. Parry Sound	"	4
28	Emsdale, Agricultural Hall	E. Parry Sound	"	5
28	Sprucedale, Agricultural Hall	E. Parry Sound	"	6
30	Magnetawan, Orange Hall	E. Parry Sound	"	7

REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1906.

PART I.—FARMERS' INSTITUTES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1907

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TORONTO.

To the Honourable WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Farmers' Institutes of Ontario for 1906.

Respectfully submitted,

NELSON·MONTEITH,

Minister of Agriculture.

TORONTO, 1907.

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TWELFTH ANNUAL REPORT

OF THE

FARMERS' INSTITUTES OF ONTARIO

FOR THE YEAR

1906.

To the Honorable the Minister of Agriculture:

SIR,—I have the honor to present herewith the twelfth annual report of the Superintendent of Farmers' Institutes. Formerly this report was published in three parts: Part I., corresponding with this volume; Part II., Report of the Women's Institute; Part III., list of meetings, speakers and their subjects, statistics for the year, etc. What was formerly known as Part III. is now known as Part II., and the Women's Institute Report is no longer published as part of the Farmers' Institute Report.

It is indeed gratifying to be able to report that the interest manifested by the officers of the Institutes and the farmers generally is well maintained. Unsolicited comments from Institute workers would indicate that the meetings held during the season 1906-07 were attended with greater interest and better results than in previous years. The meetings are from year to year partaking more of a practical nature. At many of them the officers of the Institute concerned furnished the lecturers with live animals to demonstrate their instruction on stock questions. An endeavor has been made to place the work upon a more practical basis, with the result that an increased interest has been created and the instruction has been of much more value.

The Year's Work. The records for the year indicate that the attendance is somewhat below the season of 1905-06, but considerably above the two preceding years. This slight decrease from last year can largely be accounted for by the fact that many of our Ontario farmers have left for Western Canada, and then, again, the Institute meetings are devoted more to instruction and less to entertainment, only those attending the meetings who are desirous of *learning* somewhat more relating to their business. While the total attendance is somewhat less than in two or three former years, we are not to infer from this that the interest is lagging or that the good accomplished is less.

Special Work. In addition to the regular and supplementary meetings that have been held regularly from season to season for a number of years, this Department arranged last season for a number of special meetings in the interests of bacon production, improvement of seed and destruction of weeds, and the organization of co-operative fruit associations. Further particulars regarding this work will be found in Part II.

Women's Institutes. These organizations have increased in number, and the work has been extended to new territory. We now have in the Province seventy-eight district institutes, over four hundred branches, with a membership of about eleven thousand. The Farmers' Institutes have co-operated in furthering the interests of the women's organization, and we believe that this co-operation has been mutually helpful. A number of inquiries have been received for organization meetings to be held in sections of the Province where the work has not yet been undertaken, and it is to hoped that in the near future we shall see live societies in every electoral district and very township of the Province.

Articles and Special Reports. It will be noted by Institute members that the number of addresses and papers given in the accompanying report is rather less than usual. In looking over the reports furnished to Institute members we find articles have been printed from time to time during the past few years which cover the field of Institute work quite thoroughly. We have pleasure, however, in presenting a few articles which should be read by all members with interest and profit. It is to be regretted that the number of papers contributed by officers and members of the Institute throughout the Province is not so great as in former seasons. It may be that the great advance which has been made in agricultural journalism during the past few years has to a certain extent overcome the necessity for so many special papers or addresses being prepared by local men. We are pleased to state that the articles which appear from time to time in the agricultural press are more than formerly used as a basis of discussion at Institute meetings and at Farmers' Institute Clubs. We would strongly advise every farmer to subscribe for one of our purely agricultural papers, or, at least, take one of the weeklies which are now devoting so much space to agricultural topics. The information imparted at a single Institute meeting is of much value to farmers, and such gatherings have the effect of creating more or less enthusiasm on the part of the farmer. Unless, however, the lessons taught and the interest aroused is followed by a close study and discussion of the reports sent out by the Department and articles in the agricultural papers, the greatest good will not result.

We wish to draw the attention of readers to the special reports which appear herewith. Each of these special reports we consider worthy of careful reading by the farmers, not so much because of the direct information which they contain as of the underlying lessons which may be gathered from the facts given. The article on "The Potato Industry" should be read and studied carefully by all farmers, as this is a crop which can be grown successfully in practically all sections of Ontario.

While the other special reports may appear to be of value only to a very small proportion of the farmers of the Province, they contain information and suggestions which should prove of value to all careful readers, whether or not they are engaged in the special industry reported upon.

GEO. A. PUTNAM,
Superintendent.

SELECTED PAPERS AND ADDRESSES

HORSE FEEDING.

By H. G. Reed, V.S., Georgetown.

I suppose there is no subject pertaining to agriculture on which more has been written of late than that of feeding of farm stock. Indeed, so much has that been the case that I feel but little has been left to be said. However, it is my intention to discuss in the present article not so much economic and profitable feeding as to endeavor to point out the relation that exists between the manner in which a horse is fed and some of the most ordinary diseases from which he is likely to suffer.

Heaves, for instance, is a disease much too common in our Province, and my observation has led me to the conclusion that a larger percentage of farm horses suffer from this malady than in the towns and cities of our country, and the reason for this is, in my opinion, due to the fact that a large number of our farmers feed too much hay.

No horse requires more than one full feed of hay once in the twenty-four hours. When farm horses are working every day they are subject to just this condition, because they have not time either at their morning or noon meal to eat too much hay, but in winter they often stand all day with hay before them all the time.

A horse to be in perfect health should have the stomach emptied of the previous meal for two or three hours before he is given another. If such is not the case, digestion will not take place in a perfect manner, and disease is likely to result. There is a remarkable sympathy between the stomach and the lungs, because of the fact that the same nerve trunk supplies nerve force to both organs. When the stomach is deranged from improper feeding the lungs are liable to become sympathetically affected, and heaves often result. Care should also be taken that a horse should be fed no dusty or musty hay. This dust is as light as air, and the horse in breathing draws it right into the lung tissue with every breath, and this substance, being an irritant, is very prone to develop heaves. If no better hay can be obtained, the dust should be laid by sprinkling with water, when the horse will not breathe it, but it will be swallowed with his feed and probably do him no harm; but when at all possible only bright, clean hay, free from dust, should be fed to horses. Again, no horse is in fit condition for active exercise with a stomach distended with hay, because the stomach, situated as it is right behind the lung space, if full, bulges forward into the chest to such an extent that the lungs have not room to properly expand, and cannot perform their functions properly; and anything that interferes with the function of the lungs predisposes to heaves. In many cases if farmers would feed one-third less hay to idle horses in the winter months they would come out in the spring in better condition, and we would have fewer cases of heaves in the country than we have at present.

Indigestion. Indigestion is another disease usually produced by irregular or improper feeding, such as a horse getting access to the grain bin, a too sudden change from one kind of food to another, or a too sudden increase in the amount of grain fed. The last named cause has probably produced

more cases of indigestion, especially in farm horses in the winter, than any other, and we do not need to look far for the reasons. Most farm horses are comparatively idle in the winter, but it often happens that some business on the farm necessitates a long drive, or some other hard day's work, and the owner will give probably twice as much oats for breakfast than the horse has been in the habit of getting in order to brace him up for a hard day's work. The horse, being soft for want of regular exercise, will naturally become weary on his journey, and the stomach will become weary, too, in sympathy with the muscular system, when it too often refuses to perform its functions. The process of digestion ceases when fermentation of the undigested mass in the stomach takes place. Gases are formed which cause the animal to bloat. He will show symptoms of pain, and a case of indigestion is the result. Now, if the horse had only received his ordinary grain ration the chances are that before he had become weary on his journey the stomach would have completed its work and would have been completely empty, in which case a very acute attack of indigestion would have been impossible. It is a good rule never to give a horse an extra big meal to stiffen him up for a hard day's work. This act of mistaken kindness has cost many an owner the life of a good horse, and has stopped many a farmer on his journey with a sick horse, besides having a veterinary bill to pay.

Lymphangitis. Lymphangitis is a disease quite prevalent among farm horses, especially in sections where the heavy draught horse predominates. It usually occurs in well-fed animals that have been a day off work. In the Old Country it is sometimes called "Monday morning fever," from the fact that more cases are reported on Monday morning, after Sunday's rest, than any other day of the week. A horse getting three full grain meals each day has generated in his system a large amount of heat and energy, which is just what he needs to enable him to perform the work expected of him; but when he has a day off work, if he gets his full grain ration, there is just as much heat and energy developed, and as he is getting no exercise, there is no vent for it. It is the function of the lymphatic glands to dispose of this excess of nourishment. Failing in this they become inflamed, and an attack of lymphangitis results. If the grain ration was reduced or a bran mash substituted there would be much fewer cases of this disease. Repeated attacks always leave the legs permanently enlarged, a most unsightly blemish, which materially reduces the market value of the animal. If proper care was taken in feeding and exercise this disease would not be nearly so common as at present.

Azatouria. Azatouria is becoming much more prevalent among farm horses than formerly, because of the fact that they have as a rule little to do during the winter months. It is likely to occur in horses that have been well fed and allowed to stand idle in the stable for a few days; when put to work they start off all right, but as they proceed at their work they become dull and sluggish, lose power in the hind quarters, and if kept at work will usually in a short time fall down and will be unable to rise again. This is a serious disease, and one that always calls for veterinary help; but if horses were carefully fed and regularly exercised there would be very little or no danger of them suffering from this malady.

In fact, no horse should be allowed to stand for even one day without exercise, if the health of the animal is valued by the owner, and it is just because those two most important adjuncts to health, "careful feeding and regular exercise," are not properly attended to that we have so much sickness among farm horses, especially in the winter months.

THE NEEDS OF THE HORSE BREEDING INDUSTRY OF ONTARIO.

By Duncan Anderson, Orillia

There is no more attractive and fascinating line of animal husbandry on the farm than that of breeding and raising horses of a kind and type suitable in their early years for farm work. When matured and fitted for market they are one of the most profitable lines of farm production, more especially so in view of the high prices that do now, and are likely for some years at least, to prevail. The opening years of the twentieth century will in Canada show an era of agricultural, railway, and general development. With a steady stream of immigration pouring into our unbroken prairie lands, the tilling of which will cause an increased demand for horses for many years to come, our commercial, manufacturing, seaport, and populous centres will always prove a never-failing, high-priced market for our large, strong, good quality commercial geldings. It may be in Britain, in seaport towns and shipping points, where wheeled vehicles run for twelve months in the year, that the traction auto is likely to supersede the draft horse. But as long as it is fashionable for the large milling and brewing firms to vie with one another as to who can have the best turnout, using the heaviest good quality horses that money can buy, keeping them well groomed and in high condition, loaded with harness glittering with silver and brass mounting, acting as an attractive, ornamental advertisement for some special brand of flour or beer, there will always be a high-priced, brisk demand for horses of this kind. But at present the extraordinary home demand prevents dealers from cultivating the export trade.

The Kind to Breed. Farmers can make no mistake in breeding the right kind of heavy horses. The best of them would be suitable for city dray work; the second grade would find a place in the railway construction or lumber camps. The undersized of draft type is particularly well fitted for farm work, with our increasing heavy agricultural implements and machines of wide scope and heavier draft, requiring stouter built, more compact, weightier horses to handle them. It is a very serious mistake to breed a class of light, or driving horses, unless the breeder has in his mind firmly fixed ideals. Too many of the stallions from which harness horses are bred are of very poor quality, possessing neither speed, stamina, nor style. Many are but low-grade hacks that should never have been used for breeding purposes, the reproduction of which has, in some parts of the Province, left large numbers of very inferior road horses. They are not strong enough for farm work, and were it not for the extraordinary present demand for horse flesh of every kind they would be unsaleable, and many stables would be filled with a class of undesirable, food-consuming horse stock. But when anyone has the skill and capital to breed, raise and train good quality road horses, it proves, in capable hands, a very lucrative line of horse production. Few men have the ability and the inherent knowledge of the laws of breeding and the skill in mating to produce the highest class of road or carriage horses. But the farmer is on a safe line when he stays tenaciously with the draft horses.

In selecting a stallion he should be sound and free from blemishes. We can only successfully grade up our stock by keeping to the one breed. The greatest drawback to live stock improvement in every line is the mixing of breeds. A steady, fixed course of grading up, firmly and persistently adhered to, is the only way to get satisfactory and profitable results.

I would prefer to use a compact, well-built sire rather than one that is too heavy. The mare should be large, somewhat loosely built, of open conformation, with well-formed limbs. A close, firm built mare is too often a shy, uncertain breeder.

The stallions of my knowledge that have left good stock have had heads that would be called undersized, but the face lines were clean cut, the eyes bold and very prominent, the ears a trifle short, but carried well, and their movement very active; such have always proved impressive sires. It is seldom we find the neck too long. It should be clean cut at the junction with the head, but blending snugly into a sloping shoulder. This shape of shoulder gives a short back. A close coupled loin to a short back gives strength in the upper line, but to get a long, free stride there must be length from the shoulder point to back of thigh. The hind quarters and lower thighs both inside and out, should be well muscled. In my experience the horse that has a strong, heavy sinew running down the inside of the thigh, ending before it comes quite down to the hocks, makes the most powerful kind of a horse.

The front feet and hocks are the two points in a draft horse that comes directly in contact with the hard work. I think there is no single point in the horse that has more work to perform and is more subject and liable to disease than the hocks. See that they are wide, clean and strong. A stallion with short, thick, coarse, boggy hocks should be avoided. The leg bones should be flat, cordy, and strong, shaped like a razor blade, with the thick part forward. Hind pasterns should have a good slope. Feet should be sound and well shaped.

A good length of rib, well sprung from the back, is essential. Too many of our draft stallions have long, light middle ribs and short hind ribs, giving a tucked-up flank. A horse with that conformation can neither stand feed nor work.

The feet should be large and waxy in appearance. The frog plump and elastic. Sound, open-heeled feet that are neither flat, brittle, nor contracted are the important points, along with sound, clean hocks. They should be inherent characteristics in both sire and dam. These points are imperative where the highest class of draft horses are being raised for city work. There the streets are laid with either asphalt, cement, causey, or broken stone, and sound, open-heeled feet, with large hoof-heads are such important points that no breeder can afford to overlook them. The present day show ring demands a straight, regular, true action, with a free uniform flexing of hock and knee. Judges are almost as critical about the show action of a draft horse as they are in hackney classes. Sometimes I think we are too apt to overlook the cardinal functions of a draft horse—the power to draw heavy loads. A good horse must have a well balanced, even temper, so that under all conditions, on the steep hill, in deep snow, in either hard or soft footing, he must willingly put his shoulder to the collar and draw as true as steel. A medium sixed head, with clean-cut face lines, broad forehead, and prominent, mild eye are sure indications of an intelligent, teachable disposition. But a coarse, big head, with a sunken, dull, small eye, is nearly always associated with a sluggish, obtuse disposition that you can neither teach nor trust, and often, when the load gets into a bad spot, will either see-saw back and forth on the double tree, or throw his head over the shoulder top of his working mate. The stallion that has a bold, clear, mild eye should be chosen to find the desirable disposition in the offspring.

The pregnant mare, during the winter months, should be kept at light work, right up to time of foaling; in fact, the best success is often obtained

by keeping the mare at field work until day of foaling. She should not be overworked. Avoid travelling her over very soft land. She will be apt to become leg weary. I like to have her in the plow furrow, where she is always sure of firm, solid footing. One of the principal causes of mares aborting their foals is a too free access to the water trough in winter. A sudden chilling of the whole system with a gorge of ice-cold water is one of the chief causes of abortion. She should be watered twice a day, not over one and one-half pails at a time, and that she should drink slowly. Nor should she be fed much boiled feed. Soft, mushy food has a tendency to force an over-fat growth in the fetus (embryo foal), that, when dropped, will lack spirit and vitality, and for the first few weeks will require very careful coddling, but too often will pine, languish, and die. Ideal winter conditions for a pregnant mare is to have her in harness almost every day, at slow work. Feed her clover hay at noon, clean oat straw all she will eat, and a gallon of crushed oats twice a day, with a little dry bran added. Nor should very much roots be fed, a few twice a week will be quite sufficient. When roots are generously fed they have the same tendency on the foal as soft-boiled feed. After foaling, a mare should have at least two months' rest. After that she will do a reasonable amount of farm work, as long as she is not overheated. Never allow the foal to run with the mare while at work. It should be kept in a roomy box-stall, and it will soon learn to eat, and give less trouble at weaning time.

The first winter is the important time in a colt's life. If neglected then by want of feed, exposure or too close confinement, the loss can never be regained. The aim should be to keep the colt in good, growing condition from liberal feeding and plenty of exercise. Three quarts of crushed oats per day, a feed of boiled barley mixed when hot with bran, four times a week, and all the good hay it will eat; and, unless very stormy, it should have at least three hours' exercise every day in a yard or paddock. The surest way to ruin a colt is to keep it in a close box or stall all winter. Exercise is all important, as it grows bone and hardens the muscle. I would like to emphasize this, that the most successful horse breeders always feed their colts well and give them plenty of exercise, especially during the first winter. Examine the colt's feet, keep the toes from growing long by rasping the hoof into shape. This should be attended to before putting the colt on to pasture. If it is neglected the hoofs will break up. Many a horse goes through life with poor feet because they were not properly attended to when young. The same amount of hay and grain feed will do the second and third winters as the first, only more straw and roots. I have found Swede turnips an excellent succulent feed for growing colts. A couple or three turnips a day will help keep them in condition.

Some care should be used the first few days when the colt is put to work. It is best to break him in in the cool, fall months, when the colt is rising three years old, by putting him to plow, with a steady mate, placing the colt in the furrow, giving the young horse some advantage on the double-tree, and working half a day at a time. Pay close attention to his shoulders; when resting move the collar from the shoulder to allow it to cool; if this is not done there will be scalded shoulders. When once the skin on the collar seat gets broken it is sometimes very difficult to get it healed.

Market Condition. It does not pay to sell a lean horse any more than it does to sell a steer that is low in flesh. To get anything like a horse's value he should be in at least good, if not high, condition. Good hay, crushed oats, faithful grooming, combined with liberal exercise, will bring a horse to best condition. Feed oats four times a day; smaller feeds give

better results in fattening a horse than too much grain fed at a time. Oats and barley, with a little flaxseed boiled and dried up with bran, fed four or five nights in the week, in addition to the above treatment, will soon put a horse in fine market condition. With liberal feeding a gain of 100 pounds a month is quite common. When horses are in good condition it adds at least 25, if not 30, per cent. to their value.

To summarize, the needs of the horse breeding industry of our Province are: More discrimination in breeding; staying tenaciously with a breed; using more judgment in mating. The paying of liberal service fees for the use of good quality stallions; feeding the colts well, especially the first winter. All stallions should be examined once a year by a competent veterinary surgeon, and, unless they are sound, should not be allowed to stand for service.

SHEEP ON THE ONTARIO FARM.

By John Campbell, Woodville.

Growing feeds of different kinds is the first step towards success in agriculture now-a-days. That done the ultimate profit depends on what use is made of our grown products. Without due conideration we often do as our neighbors do, never waiting to ascertain for ourselves whether their methods are the best for us to copy, or not.

One of the contagious cries throughout our Province is that "sheep are hard on grass." What does that mean? The explanation as a rule is that a dozen cows are pastured where there is grass enough for ten, and as many sheep are put in also. Need one wonder that the grass is eaten off to the plant crowns, seriously checking growth, and the animals not properly fed? But why blame the innocent sheep, when the owner is the one at fault? Given a suitable farm—the unsuitable ones are in the minority—and acre for acre, grass fed off by a well managed flock of market sheep and their lambs, will yield more clear profit with less labor than any other farm animal, and the time spent in caring for the flock is practically nil.

We read and hear a great deal these latter days about the excellent returns from some dairy herds. There are many such, of which the owners may be justly proud, and be well satisfied with. But what of the *average dairy cow?* It is given as a certain fact, repeated and repeated over and over again, everywhere dairymen assemble that 3,000 or less pounds of milk is her average animal production. We all know that the average amount no more than pays for her keep. That cow requires regular attention twice daily at the very least, Sunday and Monday holiday and every day, no matter what comes or goes, besides the extra labor of feeding, watering and care-taking. Yet for all that many owners of unprofitable dairy herds have discarded the profitable, easy-cared-for sheep without ever counting the cost, often simply because a neighbor across the line fence, "guessed" there was nothing in sheep. The faithful friend discarded to make room for more "cow boarders" which eat the value or more of all the milk they give. "Going with the crowd" soothes the doubt of the best course to pursue.

While at Institute work the past two or three years this thought often forced itself forward, "Were any other business carried on in so happy-go-lucky kind of a way as many of us are guilty of on the farm, what would be the results?"

Henceforth Ontario farmers must in order to win possible success, be clear-headed calculators, and reckon cost and returns closely. When that is done few farms will be seen without its flock of sheep. S me may make a speciality of breeding and finishing for the common markets, and there is ample room for great success in that line because of favorable conditions in some sections. Many of the most successful British farmers carry on that line of sheep-husbandry with great profit, and Ontario has many advantages which they have not.

These years a ewe flock's fleece will pay for its wintering, at an average of nearly $2.00 per head. Nearly all 100 acre farms would carry a dozen to twenty breeding ewes, as a side line. The cost of keep would be comparatively small as they would pick up much that would otherwise waste, besides keeping in check the most of the troublesome weeds which are rapidly infesting our country. In this connection the testimony of an Institute attender last winter may be stated. He said "My farm was clean years ago; had a flock and like others sold it off. Sheep went and weeds came in such numbers that a flock was again bought and with most gratifying results. The sheep came back and the weeds began to disappear, and now my farm is clean again."

Let us next notice the profiitable side. A lamb and one-quarter per ewe is a moderate estimate, as many flocks do much better.

Then 20 ewes fleeces yearly, worth say.....	$36 00
and 25 finished lambs sold in March, or April at $9.50 each	237 50
	$273 50

A sufficient sum to pay the rent of an average 100 acre farm in the better sections of our Province. Besides it is equal to the original value of the investment, plus a large part of the cost of keep for the year. Were we to consider the possible profiits in pure-bred sheep-husbandry for which Ontario is so famous, figures could be produced which would scarcely be accepted as correct by many. But when year by year the Ontario Sheep-breeders, at the greatest live stock show in the world—the "International" at Chicago—compete with such over-whelming success, does it not prove that the necessary conditions for the successful carrying on of this line of live-stock husbandry are mose favorable? And when Ontario flocks can at World's Fairs such as St. Louis win on large Exhibits, an average of over *$80.00 per head of prize money*, who can say that there is another kind of domestic animal which can make out so good a showing. We do know it is possible in raising fine-bred sheep, to have grass land in Ontario produce $50.00 to $75.00 per acre annually. Therefore the conclusions are most important in connection with successful farming in Ontario, and that the man without a *good flock*—be they pure-breds or grades, misses the assistance of one of his very best friends.

SELECTION OF CATTLE FOR BEEF PRODUCTION.

By Simpson Rennie, Toronto.

This is a difficult problem in any country where progressive dairying is carried on to such an extent as it is in the Province of Ontario, at least, to select any great number of good beefing animals, such as would be a credit

to Canada when fatted and placed on the British market. In many districts the cattle are getting so mixed with Jersey, Guernsey and Holsteins that few suitable animals can be procured for beef.

In selecting even the color or markings of the above breeds should be guarded against, for that which is seen on the outside is apt to indicate what is in the inside. The purchaser in making his selection should consider whether the cattle are to be finished on the grass, enclosed in loose boxes, or tied in the stable. If for grassing the Herefords or a cross do well and make very good cattle. They being active on foot and great rustlers. The Polled Angus or Angus grades are excellent cattle for feeding, especially so in loose boxes where a number are fed together. They are fairly active on foot, and being void of horns are not apt to injure themselves, and this breed of cattle yield a great weight of beef to the 100 lbs. live weight of the animal, and beef of first quality. But for stall feeding in the stable, at least in the opinion of the writer, there are not any to equal the Short-horn and their grades. They are of quiet disposition, mature early, and attain to a great weight. The following are some of the points to be considered in selecting beefing animals:—

The back should be straight, broad, and well fleshed for this is where the most valuable cuts are. The ribs should be long and well sprung, a short ribbed animal is seldom a good thriver. The hook-bones should be wide apart to match the width of the animal but not prominent. Short straight legs, set well apart with the ham extending well down to the hock are desirable points. I like a good depth from the loin to the flank, as well as a good heart girth, and prominent brisket with neck straight, smooth and not very long. The head wide between the eyes, wide nostrils, eyes full and mild. The skin should be soft to the touch with fine silky hair. I like to see an animal active, but not wild.

Before closing I wish to give a word of warning to those who are breeding for beef,—never let an animal get down poor, not even from birth. An animal that has been neglected and allowed to get down poor will not only have lost six months of its life, but it will never attain the same perfection as it would have, had it been kept in thrifty condition from the start.

SELECTION OF BEEF CATTLE.

By Gavin Barbour, Crosshill.

In this article I will deal chiefly with the selection of cattle for feeding purposes. Success in beef production depends so largely upon selection that it requires close observation and a great deal of study to become expert in this. To know the characteristics of a good animal, in theory, is not enough we must be able to make use of that theory in practical selection. The greater the proficiency in selection, the higher will be the profits realized.

In selecting a bunch of feeders from a large herd, we cannot take time to examine each animal closely, but we should be able to take in the general appearance at a glance, and know whether or not an animal is a good feeder, from some distance take a side view of the animals as they pass you, for the reason that we notice in a great many animals, a good depth of front. Now this is not objectionable so long as it does not show coarseness, but we must see that this depth of body is carried right back. Good doers must have

depth and thickness of heart, equal depth of flank, a well sprung rib, giving capacity for food, width of loin coming full to the hooks, with width evenly from hooks forward. The hooks should be set wide apart, a little low in preference to too high, showing smoothness. This width should extend to pin bones and carry down as far as possible. This confirmation of body, set on short legs, with neck vein blending nicely into the shoulder, having a properly formed head and good eye is what we might call a well balanced bullock, and one which will be profitable to the feeder, dealer and butcher.

Our selection should also be uniform in size and type, and if I would not be counted extreme, I would say in color. However, this is generally impracticable. Some will say, if we have good individuals, what does it matter whether they are uniform or not. But the general appearance of your bunch will help you in selling. First impressions are lasting. If you can show a dealer ten or twenty cattle standing in a row, one in size, type, and quality, without a cull, it will mean at least twenty-five cents per hundred pounds for your care in selection.

The best always bring a premium in the market, while the inferior are not wanted. How unsightly it is to have in your stable a general mixture of all breeds and sizes. Even if you have just one or two poor ones, the dealer will pick them out and want to buy the good ones at the value of the poorer ones. So you see it pays to have cattle of uniform type, size and quality.

Whether we should select heavy or light cattle matters not so much. Decide as to what time you will market. Select and feed accordingly. Suffice it to say, the short keep steer that requires 100 to 150 pounds to finish him is worth 50 cents per hundred pounds more than the long keep fellow that requires a 300 pound gain to finish him.

I have indicated the type we want. Now as to the type we do not want, we must discriminate against dairy class because they place the fat upon the internal organs where it is of comparatively little value,—the dairy type for dairy products, but the beef type for beef production.

In conclusion, let me say, select early, select the best, select the low down, blocky, thick-fleshed, early-maturing sort that distribute the flesh evenly over all parts of the body. When you have done this you have taken the first and perhaps most important step in the direction of profitable beef production.

FOWLS A NECESSARY EQUIPMENT FOR THE FARMER.

By J. W. Clark, Cainsville.

Poultry raising is becoming one of the leading branches on the Ontario farms to-day. The demand is increasing year by year. Our own markets are able to consume nearly all the eggs and dressed poultry we produce. The great west is asking for large shipments of both eggs and dressed poultry, many orders of car lots were refused last year on account of the shortage in supply of fattened birds. Our export trade to Great Britain is very small and can be greatly increased if the farmers will raise more poultry of the proper breeds and type and finish them before they are put on the market. Far too many farmers are paying little or no attention to the kinds of poultry they have, and send them off to market without fattening at all; and they get a low price because the birds are thin, and then say poultry does not pay. Far too much of this class of poultry is put on our markets every year, and

the prices realized for them are not profitable, and the demand for this grade of stuff is limited, when on the other hand good prices have been paid for properly finished birds. From 14 to 16 cents was paid in Toronto and Montreal in 1906 and 1907 for fattened chickens.

Mr. W. R. Graham, of the Ontario Agricultural College, Guelph, tells us that from experiments at the College it does not cost any more to produce a pound of chicken than a pound of beef or pork, and not nearl as much where they have free range of the fields after the harvest is off. The farmer can raise chickens much more cheaply than any one else if he has proper equipment for handling them.

A farmer should endeavor to keep at least 100 hens of some good utility breed, such as Rocks, Wyandottes, Orpingtons or Rhode Island Reds. He should pay special attention to selecting the proper type, low set, full breasted birds. For 100 hens he would require a building 12 x 50 or 6 ft. square to each hen. It is not necessary to put up very expensive buildings. A comfortable, moderately warm building, well ventilated, free from any dampness is all that is required for winter use. The floor should be kept covered with dry leaves or straw to force the hens to exercise during the cold weather. A great deal of labor can be saved in feeding if the hopper system of feeding is adopted. I have had good results by feeding a dry mash in large hoppers that will hold from 1 to 2 bushels. This dry mash is before the hens at all times, and is made up as follows, 35 per cent. bran (by measure), 20 per cent. oat chop, 20 per cent. corn chop, 10 per cent. ground alfalfa, 10 per cent. beef scrap, 5 per cent. oil cakes. To induce exercise, wheat is scattered in the litter at night and covered up. So the hens will exercise early in the morning. They will keep busy for many hours hunting out the grain as they like it much better than the dry mash. A mangel or sugar beet should be given to them each day to pick at during the winter. Each spring the house should be whitewashed, using a little crude carbolic acid in the wash as a disinfectant.

If time will permit everyone who can should use the trap nests and keep a record of his flock. By this method you can find out the unprofitable ones that are only boarders, and by using the best layers to raise stock from, a good laying strain can be bred from any variety. Hens are much like dairy cows as producers. If you have a good laying strain kept in suitable buildings and fed properly they will return a handsome profit.

Fighting Vermin. Nearly every farmer is troubled more or less with lice or mites during the summer months; the nests and perches are the chief breeding grounds for such. A good plan is to discard all straw or litter from the nests and use either tobacco stems or cedar boughs for nest material. A farmer could easily sow enough seed to raise sufficient tobacco in the garden for this purpose. A good plan is to paint the perches with coal-tar during the summer, this will fill up any cracks or chinks in them which harbor vermin. Go over the perches once a week with liquid from steeped tobacco, or coal-oil during the warm weather. Keep all droppings cleaned out regularly and your poultry house will be free from lice.

A great many poultry men to-day are using small colony houses 8 x 10 ft. square for summer use. From 10 to 15 birds are placed in these buildings early in spring as soon as the snow is off. These buildings are built on runners and can be hauled out in an orchard where the hens have free range with plenty of shade.

After the breeding season is over all males should be killed or confined away from the hens. In most cases it will pay better to kill than to keep

over as it will cost about $1.25 for feed till he is wanted again. I find a good, vigorous cockerel will give a much higher percentage of fertile eggs than a cock bird. It is a common practice of allowing the males to run with the hens all summer. But unfertile eggs will keep much longer than fertile ones, for where there is germ life there will follow decay. The germ of an egg will start to develop in from 70 to 80 deg. and when the temperature goes down it dies and the egg soon loses its flavour, and if kept any length of time is undesirable and unfit for food. Hens that are fed regularly on grain produce eggs of much better flavour than where they are forced to pick their own food.

Raising Young Chickens. Nearly every farmer has an incubator for hatching. Some have been successful while others have made a total failure of them. Hatching by artificial methods is being carefully investigated by Mr. Graham, and Mr. W. H. Day, at the Ontario Agricultural College. We hope they will solve the problem in the near future. Those who wish to get out a lot of early pullets for winter laying have to depend on the incubator

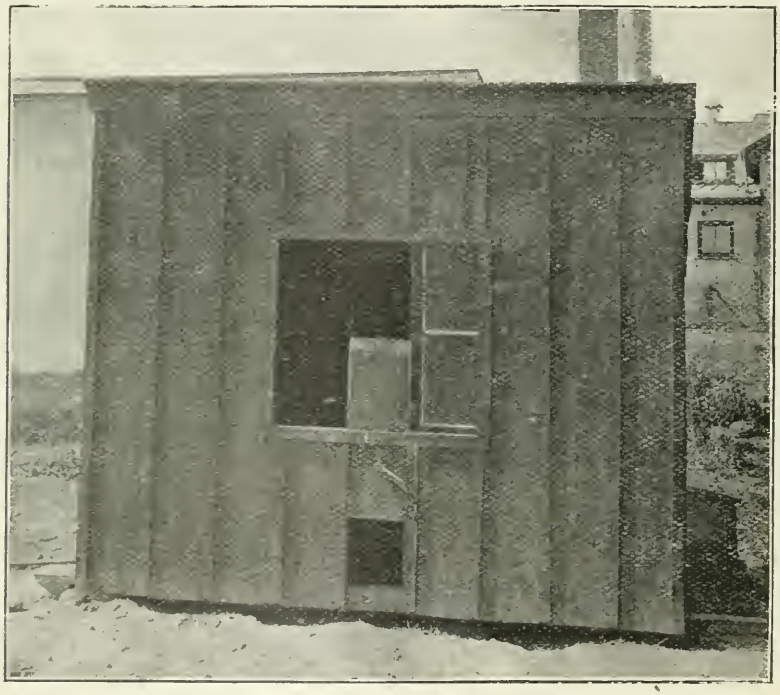
First Prize and Sweepstakes at Winter Fair, Guelph, 1906.

in most cases for the work. I have found that when plenty of moisture was used the chicks hatch much stronger and are more easily raised. I have been using milk (skim) heated to 180 deg. and when cooled down to 100 deg. a teaspoonfull of starch (pure culture) is added, this is put in pans below the eggs in incubator. It is necessary to replace this every 4 or 5 days. Take the milk out when the hatch is due. I have found that just as good results are obtained by only turning the eggs from the 4th to the 17th days of incubation. Where a farmer has the breeds mentioned above, and has sufficient brooding hens, he will have as good if not better results from them than with incubators. The chicks hatched with hens are much more easily raised.

Brooders. I have found that brooders require far too much labor, and expense in coal-oil to heat, and have used the hens for brooding chicks hatched in incubators, placing 2 or 3 eggs under sufficient brooding hens, just before the chicks are due to hatch and the hens will mother from 15 to 25 of the chicks, depending on the season. After the chicks are old enough to do without brooding they are placed in colony houses, out in the orchard about 50 to 75 in each house, and are fed from hoppers where grain is kept before them at all times. These hoppers save a lot of labor in feeding. They should be made large enough to hold two bushels of grain. Cracked corn and wheat mixed makes a very good ration. A small hopper of beef scrap should

be placed nearby to supply animal food when required. Large drinking fountains holding 6 or 8 gallons should be provided. These can be filled and hauled out on a stone boat and will last several days. Chickens raised where they have free range and plenty of feed and water mature quickly and make good, strong breeding stock.

The Uses of Colony Houses. As soon as the grain is cleared from the fields, close the houses at night, hook a horse on the colony house in the morning and haul out to the field. The chickens will find plenty of feed for several weeks, saving a lot of expense in feeding. As soon as they have reached the weight of 4 or 5 lbs. all the surplus stock should be put in fattening crates to finish for market. See that they are free from vermin before placing them in crates. They should be starved for 24 hours then fed sparingly for three or four days till they get accustomed to food.



A Movable Colony house with a Universal Hover attached.

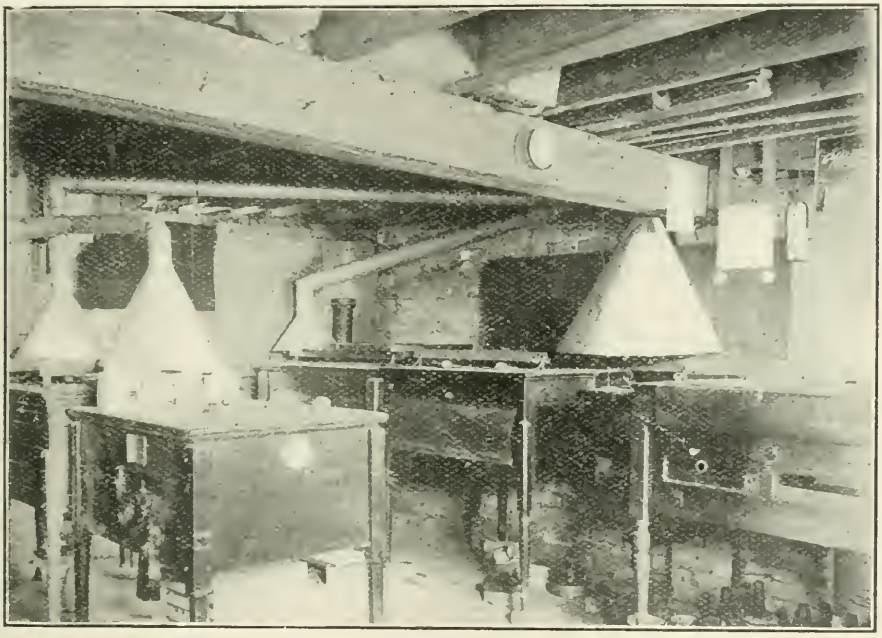
For fattening, a ration composed of finely ground oats, barley and buckwheat mixed with skim milk makes a good fattening food. Supply water once a day, and grit twice a week. They should be fit to market in from three to five weeks.

POULTRY RAISING AT HILLSIDE FARM.

Hillside Farm lies about a mile or so north of the City of Toronto limits and is owned and operated by Mr. L. H. Baldwin. The success which he has attained and the health and vigor of his flock make the study of his methods quite interesting. Apart from an intense personal interest in fowl, with

judicious care and study of their requirements, the keynote of his success is perhaps sounded in "Fresh Air and Sunshine."

Beginning with incubation, the proprietor states that there is undoubtedly much to learn in artificial methods. Probably much of the failure to make poultry farming an assured success can be attributed to improper methods of artificial incubation. Too many chicks "dead in the shell" and too high a mortality with those that hatch out is, in Mr. Baldwin's opinion, attributable to improper development during the period of incubation. Lack of stamina and vigor in breeding stock must be taken into consideration, but in all probability this condition began in the parent stock at the time of their incubation. Of course, debility often arises from improper housing, care and feeding of breeding stock, especially during the winter months.



Interior of Incubator Room, showing method of ventilation. The dark pipe, of which there are four—one in each corner,—supplies fresh air from outside. The foul air from the lamps is collected in cones and carried to one large pipe over the largest cone. Three of Dr. Wagner's "Inova" incubator thermometers (used extensively by Mr. Baldwin) are seen on top of two incubators. The racks on the incubators are used for testing the eggs when cooling and turning them.

Incubators vary considerably—even machines of the same make. However, from personal experience, Mr. Baldwin inclines to favor the "radiant" machines rather than the "diffusive," believing that something may be learnt from Chinese methods of incubation which provide absolutely no ventilation except when the eggs are taken out of the ovens for turning or cooling. The Chinese usually secure a sixty to seventy per cent. hatch, while our averages range from forty to fifty per cent. with chicks not nearly so healthy as theirs. By way of further explanation, we are referred to Prof. Graham's test of the atmosphere under setting hens, indicating a high percentage of carbon dioxide, which condition obtains throughout the hatching period.

A high percentage of carbon dioxide is retained in the lungs of the human even after exhalation, for in breathing the lungs are not entirely emptied. If an attempt is made to force the breathing, or to breathe rapidly, the head becomes dizzy from an excess of oxygen, which is also the case in high mountain climbing. Now, if too much ventilation is allowed in the incubator, especially by the diffusive system, an over amount of oxygen may be supplied which probably accounts for much abnormal development in the chicks.

The proprietor explained that, after comparing his records for several years back, he prefers radiant heating machines to those employing the diffusive system. The natural hatch with the hen sitting on the eggs is an example of radiant heating.

Referring to "The Prairie State," the following experiment was related: As radiant heat is desirable, particularly for the first half of the hatch—diffusive heat giving too much ventilation, too much oxygen—the ventilation was shut off completely and only radiant heat applied for the first ten days. Water was placed in the machine from the first. Mr. Baldwin thinks this may count very materially towards the vitality of the chicks, and from his experiments this season, better results were obtained by using moisture. A tray of sand was placed in the bottom of the machine. This was kept moist continually. The eggs were placed in a metal tray lined with strong brown paper, and on the 11th day (after testing), the eggs were removed from the metal tray to the ordinary open tray and allowed to remain on the open tray for the remainder of the hatch. The sand tray was removed on the 13th day, and after that, no moisture was applied. The results were most encouraging, there being not only a high percentage hatch, but the chicks were fine, vigorous and well developed.

As Mr. Baldwin expressed it, "One swallow does not make a summer," but while not claiming that the results were conclusive, as they obtained only in one hatch, still, he feels confident that moisture is helpful throughout the first ten days and that during that period, excessive ventilation should be avoided, indeed he thinks that perhaps it is as well to have no ventilation. After the first ten days, the ventilation should be gradually increased until the 16th day, when full ventilation may be allowed.

This Poultryman has experimented by placing the eggs in closed trays and covering them with a loose piece of flannel, maintaining a temperature of about 101 degrees internal heat, the flannel covering being removed only when turning the eggs and kept in place until the eleventh day, after which it is removed and the eggs exposed to the ordinary conditions of the incubator. It is believed that this materially aids in the production of vigorous chicks. However, there is one difficulty with this, in the ordinary incubator—a uniform temperature is not maintained throughout the egg chamber.

The temperature of the centre of the egg as taken by an egg thermometer, should, in the opinion of the proprietor, be 100 to 101 degrees. During the first twenty-four hours he likes to expose the eggs to a fairly high temperature and afterwards reduce it a little. In fact, he recommends a rather high temperature during the first four days of the hatch. In this way, the germ gets a vigorous start, then being retarded by a lower temperature in order to prevent a premature hatch, much more favorable results obtain.

The incubator room was ventilated by four "U" shaped drain pipes (6 inch) which were free from two to three feet in the air outside, and five feet inside the room. These introduced plenty of fresh air, while large galvanized sheet iron funnels over the lamps, collected the foul air from in-

cubators and lamps, into tubes which ran through a large pipe into the open air, thus producing a most admirable system of ventilation.

In contrast with this effective method, Mr. Brown who a short time ago, toured through the United States and Canada in the British poultry interests, remarked upon the general lack of any attempt at systematic ventilation of incubator rooms. The above is a unique system which is quite consistent with the "fresh air" system for poultry.

There are numerous makes and plans of brooders, but generally speaking these may be classified as bottom heaters and overhead heaters. The "Peep of Day" Brooder is a good example of bottom heating machine. In the overhead heating system, metal drums contain the hot fumes from the lamps. Mr. Baldwin has adhered closely to bottom heating machines and has devised a brooder or hover chamber which enables him to adjust the brooder to various conditions of outside temperature and to the varying ages of the chicks. In his opinion, the main essential of a brooder is that it should be snug and the condition of the chicks at all times as comfortable as possible. The floor of the hover chamber should be about on a level with the ground and the brooder made to face as nearly south as possible.

The chicks are removed from the incubators to the brooders the evening of the day after they are due to hatch, that is to say, the chicks will generally hatch on the afternoon of the twentieth day, and the hatch will be complete on the morning of the 21st, then on the next afternoon they are removed to the brooders and for that night are closed in the hover chamber.

The next day they are allowed out from under the hover for a run in the morning without being fed, but care is taken to close them in again to prevent any danger of their bunching outside of the hover. The attention necessary to see to this depends greatly on the weather conditions. On a bright sunny day, they are much more likely to bunch outside, attracted by the sun, when they may be chilled by a cold wind, whereas on a cloudy day the same thing would not happen.

As soon as the chicks appear hungry they are ready for food—finely cracked wheat and corn, ground, broken shredded wheat biscuits, mixed in about equal quantities, with a little fine chick grit added. They should be fed sparingly until they develop a fairly good appetite and then given a mash made of the same material moistened with raw eggs, the raw eggs being broken shell and all into the mash and this thoroughly mixed to produce a fairly dry mash which is fed the chicks scantily at first but more frequently as their appetite develops. Later on they should be given this feed twice a day; the last feed at night being rather over fed with the idea that what may be left will constitute their first feed early in the morning and may be secured as soon as they come out from under the hover. The feeding of the mash during the morning between 10 and 11 and again in the afternoon between two or three o'clock is governed by the appearance of what food may be left from the earlier dry feeding, that is to say, if the chicks appear to leave any of the dry feed, the feeding of the mash is skipped until their appetite again appears to be equal to another meal. When the chicks are from a week to ten days old, some small wheat is given them in the evening, as soon as it is seen that they eat it readily, whole wheat is made the full evening meal.

In order to properly regulate the lamps in the various brooders, Mr. Baldwin has a small red flag hoisted at the side of each brooder. In this way, each lamp receives the special attention it requires. If a brooder is getting too much feed or any other change is necessary, the flag is moved

from the side where it is hoisted, to the middle of the top of the brooder, thus indicating where special care is necessary, and in this way the brooder is sure to get it.

His idea is to have the young chicks as snug and comfortable as possible, judging the temperature of the brooder by the appearance of the chicks, that is to say, if the chicks appear to crowd together in some particular part of the machine, the conclusion is that they are not warm enough, and the lamp should be turned on or more covers applied to the hover. On the other hand, if the chicks spread to the outer parts of the hover, thus indicating that they are too warm, the blaze of the lamp should be reduced or some of the coverings of the hover removed. However, the aim should always be to retain a fairly high temperature in the centre of the hover so that any chicks that may not have the vitality of the others and consequently look

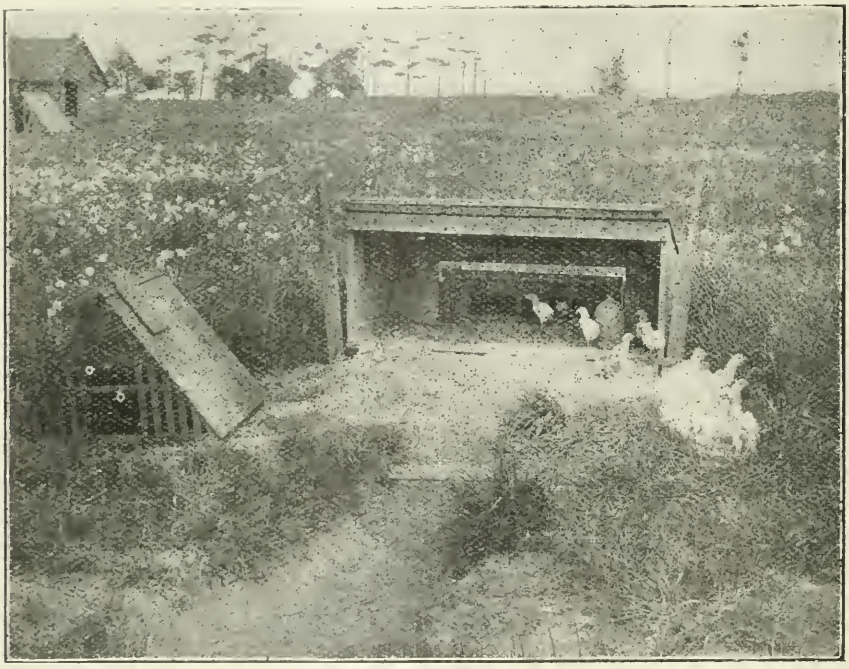


Fig. 1.—Brooder and Brooder Coop in position with wire netting. Also "A" Coop ready to be used by the chicks in place of the Brooder.

for more heat, may find a spot congenial to them, while the more vigorous chicks will push out into the wings of the hover where they find the temperature adapted to their requirements.

The lamps are maintained in the brooders for three to five weeks depending upon the period of the year and the condition of the weather. Just as soon as the chicks appear to find the heat oppressive, the lamps are put out, but before the lamps are out, the coverings of the hover are removed and the hover itself, leaving the hover chamber entirely open. After the lamps are out for a few days the division between the hover chamber and the front of the brooder is removed, leaving the brooder simply an open shed, which gradually hardens the chicks so that they may be ready to occupy the "A" coops (Figure 1), which are placed instead of the brooder itself which is removed, so that the chicks returning in the evening, enter

the "A" coop instead of the brooder and these coops are afterwards removed each day their own width. The chicks occupy the "A" coops for another six weeks, when the roosting coop is put in place of the "A" coop and likewise is removed each day its own width, the chicks occupying it for the rest of the season. (Fig. 2.)

Young chicks in the brooder should be made to take a morning siesta of one and a half to two hours every day, from 11 a. m. to 1 p. m., as during that time the sun's hot rays do them more damage than at any other time.

When there is still danger of snow, the brooders are placed inside a Brooder House or in "wigwams" made 8 feet square at the base and with a ridge roof. The chicks that are placed in the outside brooders after they have been removed to the "A" coops and later on, to the roosting coops, may gradually be moved towards one of the "wigwams". At the age of three months the cockerels are separated from the pullets and their place in the

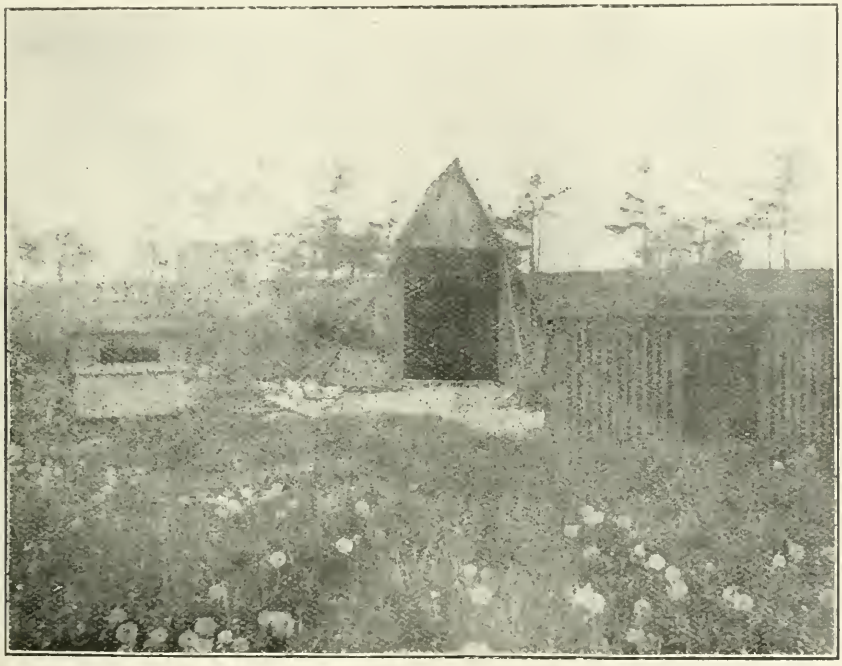


FIG. 2—"Wigwam" with "A" Coop inside. The Brooder just removed from the "Wigwam" stands to the left, and to the right of the picture is seen one of the Roosting Coops for chicks when 12 weeks old.

wigwam is made up by the chicks that come from the out door brooders moved towards the wigwam. In this way each wigwam is comfortably filled with chicks of fairly even size, each wigwam accommodating from 30 to 40 pullets for the rest of the season.

In front of each brooder coop and also in front of the wigwam is a small yard about 10 feet in diameter, enclosed with a wire fence of inch meshing about two feet wide. This is supported by ordinary builders' laths driven into the ground with the edge to the wire netting, care being taken to fit the wire closely to the ground in order that the chicks may be kept within the enclosure until they are old enough to be allowed their freedom, which is generally attained at the age of three to five weeks, but much depends upon the individual flocks and weather conditions.

The wigwams and outdoor brooders are placed about 100 feet apart so as to avoid any danger of flocks intermixing. At the time they have attained the age of three weeks, they have become so well located that in most cases they will return to their own brooder no matter how far they may roam in search of food. At the first, each flock is fed immediately in front of their own coop, but as they grow and wander, the feeding boards are concentrated at local centres and the birds fed in rather larger flocks. The mash is fed on boards in long lines (Fig. 6), and care is taken to provide ample board accommodation for each flock, more feeding boards being added if the fowls are in any way crowded. The whole grain feed at night is scattered in the grass about the feeding boards. Constant feeding of the chicks will wear down the grass, but the grain is then thrown farther out and thus the feeding ground is ever widened.

Fig. 3—1907 Brooder showing the easterly half of roof open. The hover cover and one blanket stand to the right. The wooden lid of the hover chamber can be seen in the rear compartment of the brooder. The two side doors should be made nearly the full width of the front chamber, and not as in the photo. These doors should have a wire screen on the inside and a sliding door on the outside to close it up.

During the summer, after the cockerels are three months old, they should be removed to yards by themselves. Birds that do not give promise of being of sufficient value for breeding purposes, should be at once marketed. These sell readily and at good prices, as soft roasters. During the month of September, a general round up of the pullets is made. A careful culling takes place and all the vigorous and well developed pullets are then removed to their winter quarters so that they may if possible become accustomed to them before they commence to lay. When this is done, and they begin to lay in the fall, it is likely that they will continue to lay all the winter.

The chicks always have free access to drinking fountains and to feed hoppers. These feed hoppers are about three feet high and a little better than 12 inches square, having two sections which contain, on the one side, corn, wheat, broken shredded wheat biscuit, barley and ground meals, and on the other side meat meal. The fowl may at any time get this feed through an opening at the bottom, covered with fine wire screening.

The 1907 plan of brooder which Mr. Baldwin has designed, aims at providing snug conditions for the young chicks. As in other brooders, the lamp chamber is under ground, a drain being dug immediately in the rear to protect the lamp chamber from flooding in case of heavy rains. By means of a double opening roof, the operator is enabled to open up the brooder on the lee side, that is, with a strong east wind, he will open up the west half of the roof, and vice versa with a strong west wind. The south end of the brooder can be either opened or closed. In case of a strong south wind which will seriously affect the temperature of the brooder, the south is kept closed.

The hover floor should be about on a level with the ground, and the brooder should face the south. The construction of the hover is on the "bed" principle—that is to say, it enables the poultryman to add "blankets" and "comforters" as weather conditions demand or the age of the chicks requires. Various blankets are used. The first is made of canvas and flannel, stretched tightly on a light wooden frame, while the second is of grey flanned (Fig. 3), with slashed edges, which hang down to the floor of the hover. In very cold weather several thicknesses of newspaper may be piled on the other blankets, and these give a wonderful degree of comfort and warmth. A light wooden cover may be used in addition to the regular hover lid. (See Fig. 3.) These coverings may be removed from time to time to keep the chicks always comfortable, and, if the weather permits, one week after the coverings have been taken out, the lamp may be allowed to go out.

In preparation for the winter work the stock of the previous year is carefully culled, and any birds that have shown weakness of constitution in any way are removed, and only the most vigorous of the flock retained for winter layers and breeders. During the period of the moult all yearling birds are fed freely with meat, either by freshly cut green bone or by meat meal, fed in mash or dry in hoppers. Many have suggested the possibility of forcing the moult in yearling stock, but little good is gained by so doing.

If the flock are in fairly healthy condition they will moult naturally, at the proper season of the year. After the moult is over, and the growth of feathers fairly well completed, care is taken to see that the flock do not become over-fat by too heavy feeding, and the same care is taken with the pullets, not to feed too heavily at first, to force egg laying, but rather to allow both the old stock and the pullets to attain their development in ordinary course and enter into the laying period in the best possible condition. When laying has commenced the feeding is increased to meet the demand for egg production.

As soon as fall weather breaks and the birds are confined more to the henhouses, plenty of straw is kept on the floor of the henhouses, and in this grain is thrown to encourage the birds to exercise by scratching. During the winter a fresh supply of straw is added whenever it appears necessary. This straw and whatever soil may appear to be contaminated with the droppings of the birds is all cleaned out during the month of July, and fresh soil placed in the henhouse. This will thoroughly dry out before the fall of the year and the time again comes to distribute fresh straw.

During the winter mangles are supplied to the birds continuously by placing them on nails in the wall of the henhouse and slicing one side of the skin. After the mangle has a starting point, the birds will pick out the interior. Water is supplied to the flock in basins placed on a level with the dropping board, and in this way it is kept out of the scratching material of the henhouse. (See Fig. 5.) As soon as the snow comes and the water in the bowls freezes, the birds being allowed free access to the snow, no more water is supplied, and they freely eat the snow in its place.

Care is taken to give the henhouse a thorough airing every day, and in the very coldest weather, with the thermometer well below zero, the windows will be opened for an hour or more, unless there are stormy conditions at the time. The thorough airing each day keeps the henhouse dry, and there is no difficulty with moisture coming from the frost collecting on the walls of the house.

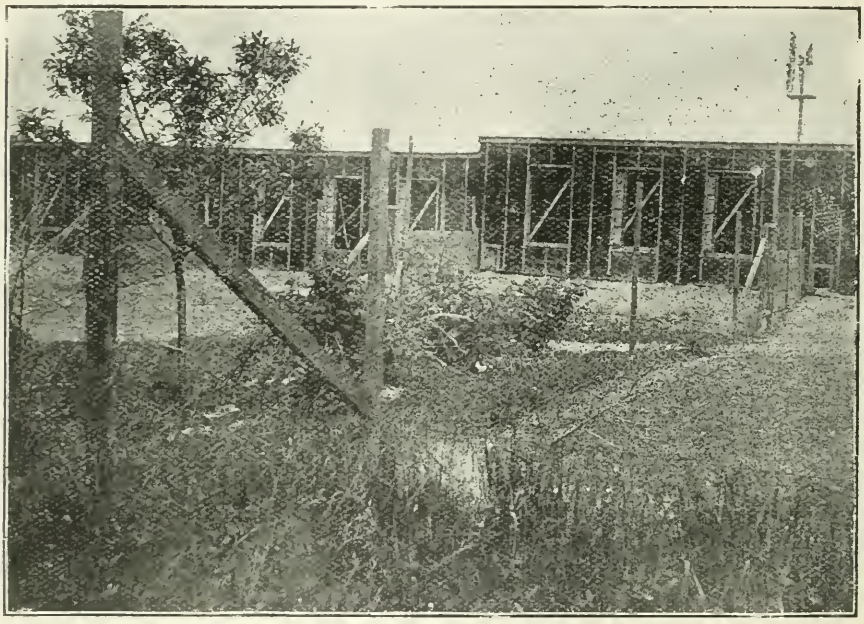


Fig. 4—Quarters for laying birds, showing yards.

Mr. Baldwin started with the *scratching shed henhouse*, which was first introduced in this continent by Mr. A. F. Hunter. Its aim was to supply poultry with ample fresh air and scratching room by use of an open shed, protected by curtain screens against the wind and rain. In ordinary weather these screens were left open, exposing the fowls to the open air. This henhouse worked to advantage, but rather increased labor by the care necessary in raising or lowering the curtain screens during changeable weather. Just in front of the scratching shed henhouses a strip of artichokes were growing as shade for the fowl. When autumn comes a tidy little income will be derived from this succulent vegetable.

The scratching room henhouse (see Fig. 4) was then tried. This was designed by Dr. Woods of the "Reliable Poultry Journal." It combines the useful features of the scratching shed plan with more economy in management. These henhouses are constructed on the plan of continuous pens,

each pen being 12 feet deep and 20 feet wide and accommodating 30 to 40 hens. It has been suggested that it would be an advantage to have these pens rather deeper, so as to move the roost further away from the window. Pens 14 to 16 feet square might be considered well adapted for the purpose. The scratching room henhouse practically throws the scratching shed and roosting room of the old plan into one room.

The roof slopes from the south to the north. The south wall is 7½ feet high and the north 5½. Many poultry raisers prefer a ridge roof, making the side walls about six feet high and filling the roof space with straw, which, no doubt, has much in its favor. The interior of the north wall and the roof are sheeted with tongue and grooved sheeting lumber. Earth floors are used to avoid harboring rats. Occasionally, however, they get in under the

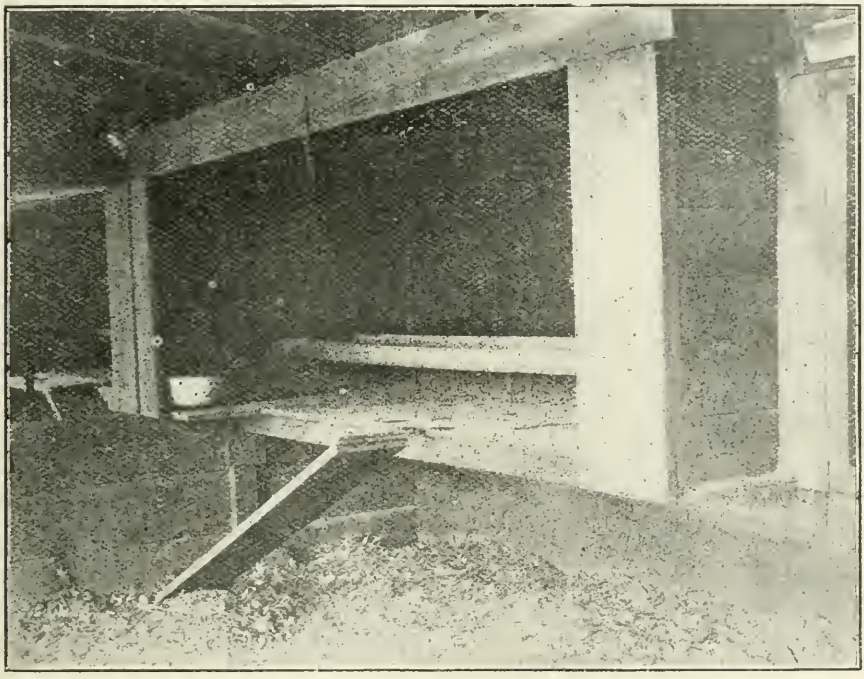


Fig. 5—Showing interior of pen, particularly the roosting quarters, and situation of drinking bowl. The edge of the coop for extra males is seen in the very right of the photo.

north wall, but in Mr. Baldwin's own words, "We just dig them out and let our fox terrier finish them."

The foundation of the house is made of 6x4 material, supported by fair-sized stones. On this foundation the studding rests with cross pieces, extending from the south sill to the north sill at the division between each pen. The frame is covered with inch lumber, and this is again covered with ruberoid roofing. Special care is taken to cement the roofing, particularly at the point where the roof connects with the north wall, so as to prevent all possible chance of draft on the birds on the roost.

The windows in the south wall are 5 feet by 3 feet, with ten by twelve-inch glasses (twelve panes). The window frames should be made to slide from side to side and a space left open on top of the window frame, so that it may be raised in the event of ice collecting at the bottom. Inside

each window is a wire frame screen, with inch meshing, which keeps the sparrows out as well as retains the birds when required within the pens. The henhouse has two wings and six pens in each. There is also a central feed room eight feet wide, which is useful in keeping the supply of grain, as well as making a coop for individual birds when necessary. One wing has individual runs for the pens, to be used for breeding purposes, but the other wing has one large run in common, which is quite sufficient where one does not wish to particularize in hatching eggs from individual pens. In each fence between the runs, and beginning at the henhouse, is a sliding gate, through which a wagon can pass when the henhouse is cleaned in July.

Fig. 6—Showing interior of one wing. The section of the pen showing place for nests, coop for extra males, and roosting quarters can easily be seen. Notice the cross partitions boarded close at the bottom with wire netting above. The doors at the left of the partition have double acting spring hinges so that they will swing either way.

Along the north wall of the interior of the henhouse a shelf is run three feet wide and about two and one-half feet from the floor. (See Figs. 5 and 6.) One half of this in each pen is used as a dropping board under the roosts (which have wide boards leading up to them), and the other half is divided into first a coop five feet wide, which, if necessary, may be divided again into two coops, where extra males may be kept, and where brooding hens from each pen are placed with an extra male, to stop their brooding condition. (Fig. 6.) The remaining portion of the shelf is used for the nests, which are placed in two tiers of three each, the upper tier being somewhat narrower than the lower. (Fig. 6.) The nests, being each about eighteen inches square, afford ample accommodation for the birds in the pen. Two or three hens will occupy the same nest, apparently in preference to individual compartments. This arrangement can be adapted to a system of trap nests. A careful record is kept of the number of eggs produced each

day in each pen. The coops are supplied with neat little hinged boxes, containing crystal grit—a preparation composed of broken granite—in the one side and broken oyster shells (lime) in the other.

In the runs in front of the henhouses were planted raspberry bushes for immediate shade; also plum trees, which are probably the best fruit to grow in hen yards, as the hens eat the curculio which destroy the plum. (See Fig. 4.)

With regard to the diseases of poultry this poultryman considers it not worth while to spend much time in doctoring sick chickens beyond the simple remedies for colds and the necessary precautions for fighting insect pests. If birds are subject to diseases of serious consequences the sooner they are disposed of the better. At times, especially in the fall of the year, after the

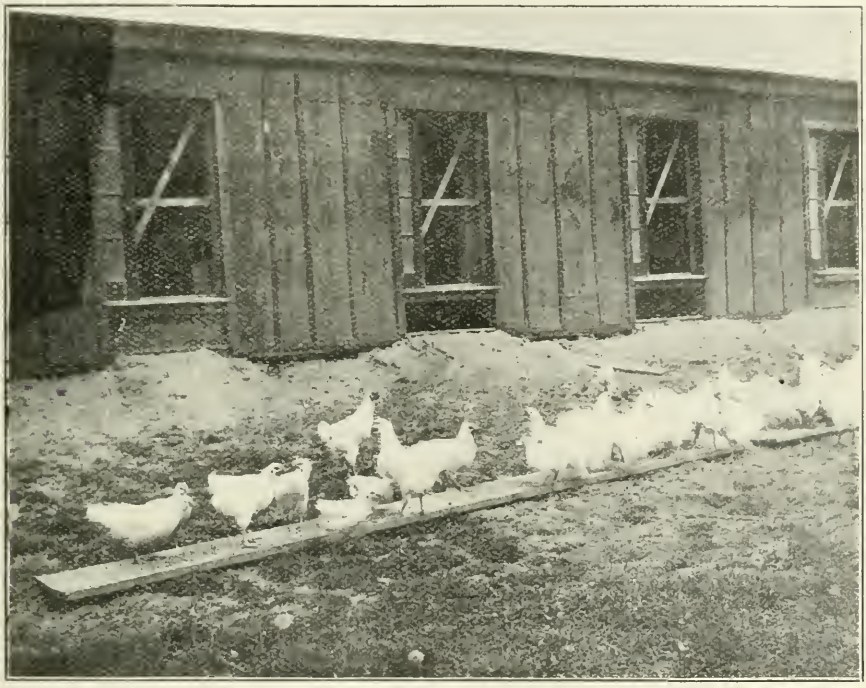


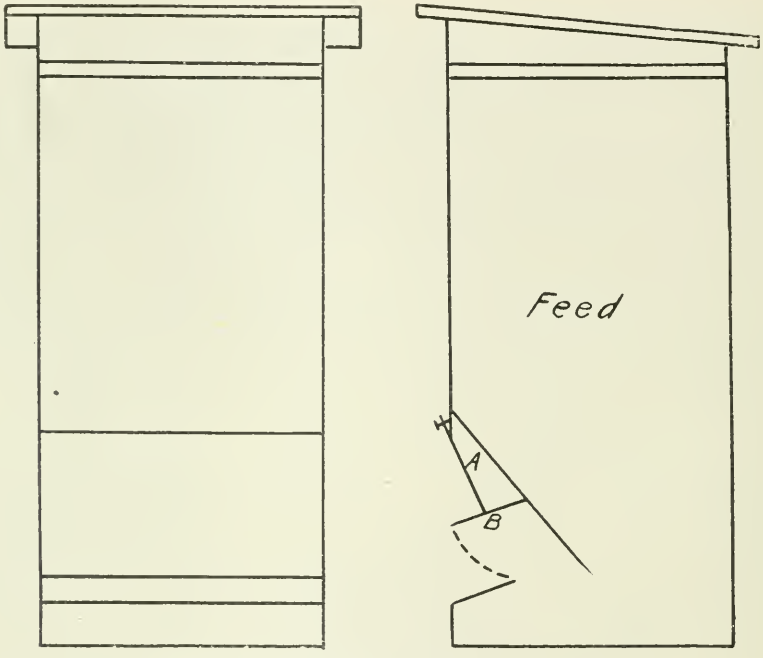
Fig. 7—Three months' old chicks feeding on boards in front of Brooder House.

birds have been brought in from the outside coops to the henhouses, there is considerable danger of influenza colds, which, if not checked, may develop into serious attacks of roup. These colds will develop from drafty conditions, and may occur by leaving the windows open too much on a windy night when the wind comes in such direction as to blow directly on the roosts. If there appears any intimation of influenza through the flock, which will show itself by constant sneezing or slight running at the nose and eyes, zenoleum is used as a spray, and applied at night over the birds when on the roosts. If cases of cold do not respond to the treatment, and show evidence of growing worse, this is taken as a weakness of constitution, and the birds are moved from the flock as being undesirable.

Active birds, with free access to good dusting facilities, will keep themselves free from lice, provided a little care is taken to apply coal oil or some insecticide to the roosts and roof.

Suggestions for Poultry Raising on the Average Ontario Farm.

About the middle of March set the incubator going so as to produce chicks about the first week of April. Put any brooding hens on china eggs till the chicks are hatched; then transfer the chicks to the care of the hens. Any that may not have such care must go into the brooder. This method will reduce much of the care and attention that the chicks require during the busy season, and this part of the work—care of the brooder—is the most trying and exacting of any work connected with poultry raising. Farmers should pay more attention to increasing vigor and productiveness in their stock rather than to go into it more extensively.



Improved feed hopper. 12 in. x 12 in. x 24 in.

A. String to raise lid or to close it when not required.
B. Metal lid adjustable to size of chicks.

In adopting any of the up-to-date methods discussed in this article, they should make use of any available space which may not now be used, or which may at the present time be used for poultry, provided these spaces are suitable. There is no better place for a hen to spend the winter than around the barnyard, but several things should be considered in adapting these places for henhouses, amongst which may be mentioned cleanliness, dryness, freedom from drafts, and plenty of fresh air. It is also necessary to allow fowl to secure plenty of exercise and plenty of suitable dusting facilities.

GROWING EARLY VEGETABLES FOR COMMERCIAL PURPOSES.

By E. E. Adams, Leamington, Ont.

In the Province of Ontario this question is being discussed more and more during each succeeding year. Some years ago some persons in different parts of the Province conceived the idea that possibly with the increase in population this line of business, if taken up and given strict and careful attention, might be made to pay and prove of value to others. The idea has worked wonders. In a great many parts of the Province we find men who are devoting their whole time and energies to the production of different varieties of vegetables for home market, as well as for shipping purposes. Not only do we find this in our own country, but the idea seems to have taken root in many places—in Colorado, Florida, Texas, and other parts of the United States, and when we read of the results attained in these places in such a few years we are constrained to put forth greater efforts for the extension of the business in our own Province. We read of some men growing a field of eighty-five acres of crookneck squashes, 300 acres of early potatoes, 250 acres of cantaloupes, fifteen acres of peppers, and so on, and this means that there must be something in it or these men would not continue in the business from year to year.

Of course, the great question is that of sufficient market. Ontario can use a very large quantity of vegetables. There is a large quantity grown. The distribution is not along correct lines, from the fact that too much stuff is sent to some markets while others are receiving none. Many growers consign all they grow to commission men, and in consequence do not net as much at the end of the season as those do who handle their produce on different lines. We find here that it pays better to sell our produce f.o.b. Leamington than to send it all over the country promiscuously to be sold for any price that it will bring.

This brings up the question of co-operation. The selling of this produce is of most vital importance to the grower, but most of them as yet do not appear to appreciate this part of the question at its value. This will work out in time, and no doubt growers will then receive for their produce a fair and reasonable price, which is not always the case under present methods.

In this locality we grow early cabbage, tomatoes, wax beans, peppers, melons, cucumbers, sweet corn, peas, onions, and lettuce for shipping purposes. Cabbage seed is sown under glass about March 1, and when large enough is transplanted to beds or flats, giving it a space of three by three inches, carefully watered once a week with manure water and at other times with clear water. To give what I believe to be the best plants, I use in place of manure water a mixture of nitrate of soda and Peruvian guano, equal in quantity, three pounds to a barrel of water. Plants should be grown cool. If grown too warm they will run up slender. They should be kept down short, and will be much better for it. These are usually planted in the field in rows three feet apart and two feet in the row. Cut out from the beds or flats dividing the earth so that each plant can have as much attached to it as it had in the bed, say three by three inches. In planting in the field, a small garden trowel is used for making holes to set in. The soil for growing cabbage should be in the best possible condition, not only as to richness, but must have been well cultivated previous to planting, and while the crop is growing, in order to preserve as much moisture as possible. Some growers use Peruvian guano, sown broadcast at the rate of 1,000 pounds per acre, and 100 pounds of muriate of potash, well worked in before

planting, and from three to five hundred pounds of nitrate of soda is scattered around the plants at planting time and through the growing season. On sandy soil the soda has proven of great value in forcing this crop to maturity, and a much larger crop is the result from its use. The cabbage maggot is troublesome in some places, but has not been so here to any great extent as yet. In some places this pest ruins the crop, and must be taken care of when found. If the soil is removed around the plant, not enough to bare the roots, and a half-teaspoonful of bisulphide of carbon is poured in and covered with soil at once, the maggot will be put out of business. This treatment will save the crop, even though it appears to be quite a job to undertake with an acre or so, yet it will pay well.

Tomatoes are started March 1st, and in about three weeks are transplanted from seed bed to other beds and spaced about two by two inches, then moved again in about three weeks, then again in about two or three weeks, according as the plants require. Some growers transplant from seed bed to other beds, giving the plants about four by four inches space, and do not move again until they go to the field. Stronger plants can be made by moving at least twice. The soil in the hotbed or greenhouse for growing these should be reasonably rich. Well rotted stable manure or pulverized sheep manure can be mixed with the soil to enrich it. The soil in the field should be manured fairly well, but if a clover crop is turned under it will need no manure. There should be added to sandy soil 100 pounds of sulphate of potash, 300 pounds acid phosphate well worked in after plowing, and after plants are set 150 pounds of nitrate of soda should be scattered around the plants and well worked in with a fine-toothed cultivator. This will give the plants a good start, and result in earlier fruit. Some difference of opinion exists as to the distance apart to set plants. On my soil I find three and one-half by five feet quite satisfactory, while some growers plant four by four, and others four by six. Some believe that by setting stakes near the plant and tying them to it as they grow (training to a single stem) will give the best results, but while I have not adopted this method as yet, I purpose giving it a trial this season, as against the common method of growing them, to find out which plan will produce the finer fruit, quantity, earliness, etc. As soon as the plants are all in they should be cultivated and hoed as often and as carefully as possible. Some say cultivate once a week. My plan is to cultivate twice a week to force a fast growth, for the early crop is the one that pays. Shipping commences usually July 1st, and the early crop is all off about August 20th. Some later tomatoes are grown for canning, and also for supplying the northern sections of the Province and the west, but the price being then rather low, not many are growing for shipping, but prefer to sell to the canneries.

Cantaloupes are started about May 10th, under glass, either in pots or sods cut to four inches square. For my own use I prefer pots, on account of easy handling in planting in the field. These require good soil, both in the greenhouse and field. Well rotted manure mixed with the soil makes a satisfactory potting material. About a peck of manure to three pecks of good soil well mixed. When the plants have buds on them they are set in the field about June 7th, given constant and thorough cultivation, forced by being given an ounce of nitrate of soda sprinkled around the plant and hoed in, this being done as soon after setting as possible. Plants are set in the field in rows six feet apart and three to four feet in the row, each hill having only two plants. Good soil should be used to grow a crop of melons, that which has had clover plowed under or covered with eight or ten tons of manure and plowed in the previous fall. Either method is good, and the

best soil is a sandy loam. Melon plants should be sprayed with copper sulphate three pounds, paris green three ounces, and lime six pounds to a barrel of water for Striped Beetle, which destroys the plants, and sprayed once a week or every ten days with sulphate copper three pounds to a barrel of water, with six pounds of lime added to prevent blight. In shipping only well-matured melons should be put up. No smooth ones should be packed under any circumstances, as they have no flavor; but only those which are well netted should be shipped.

Cucumbers are given about the same treatment as melons, except they are started March 1st, and planted in the field, under cotton frames or beds, to prevent being whipped around by winds, and to assist growth. This is only used in growing early cucumbers.

Wax Beans, Sweet Corn, and Peas are planted as early in April or May as each sort can safely be put in the ground, and no special treatment is given them other than thorough and frequent cultivation to keep soil loose and open and force a quick growth.

Lettuce is grown in glass houses for shipment during early spring, and in early winter for Christmas trade. Not much is grown in January and February, as the cost of fuel is an item of expense that uses up all the profit for these two months. At the same time, the proper way would be to have plenty of glass so that a continuous crop can be grown throughout the season when there is no out-door-grown stuff, so that when customers are arranged for they can be sure of a full supply at all seasons. Stable manure and plenty of it, is used for fertilizing and nitrate of soda is given (2½ pounds to a barrel of water) once a week, other watering being done with clear water. About 10 weeks is required to grow a crop of Grand Rapids lettuce, this being the favorite variety. This is grown in a temperature of from 40 to 45 degrees at night, and from 10 to 15 degrees higher in the day time.

As to the profits in the business, that is a part that everyone will have to work out for themselves. During the growing season there is plenty work to be done, but when the marketing of the crop is on there is still plenty to take the attention. If growing entirely for shipping to commission men, attention must be given to finding out which is the best paying market when shipments are ready. This means the use of the telegraph or telelphone. The expenditure of money for this purpose is money well spent, as the business can then be carried on intelligently as well as profitably. As before mentioned, I prefer selling at a price on board cars here.

THE FARMER'S FRUIT AND VEGETABLE GARDEN.

By E. E. Adams, Leamington.

Generally speaking, the garden is neglected to a more or less degree, other work being attended to first. To make a success of a garden requires time, attention, good soil and good cultivation. The almost universal practice is to have the fruit and vegetable garden combined: and the flower garden is sometimes combined with them. When the fruit and vegetable gardens are combined, the smaller and choicer fruit trees only should be admitted, such larger-growing trees as apples, pears, cherries, plums, etc., being relegated to the orchard.

Ground with a gentle incline towards the south is desirable for a garden. On such a slope good drainage can be secured, and the greatest

possible benefit is derived from the Sun's rays. It is well to have an open exposure towards the east and west, so that the garden may enjoy the full benefit of the morning and afternoon sun, but a shelter is desirable on the north, or in any direction from which the prevailing winds in the particular locality may happen to come. Good sandy loam is the best soil for gardening, although heavier soil may be brought up to a proper condition by manuring and cultivation. Wherever the soil is not quite suitable, but is capable of being made so, it is best to remedy the defect at the outset; and as it will be found easier to render a light soil sufficiently retentive than to make a tenacious clay sufficiently porous, a light soil is to be preferred to one which is very stiff and heavy.

In laying out the garden, the plan should be prepared in detail before commencing operations. The form should be square or oblong, since the working and cropping of the ground can be more easily carried out. Long straight rows of fruit or vegetables are easily cultivated, and much time is saved than where small square beds are used and have to be all hand worked. Good drainage must be given in all cases, (providing there is no natural drainage). On deep sandy soils as we have here west of Leamington, no drainage is required, as the water sinks into the soil quickly, and cultivation can be carried on in a short time after a heavy rain.

On heavier soil, it is desirable to have the water off as quickly as possible, in order to prevent the soil becoming hard and compact.

In a general way a half-acre will be found quite sufficient ground for most farm gardens. All the fruits that can be grown in the district in which the garden is situated, should be included, as the farmer is surely entitled to the best that his land can produce. There is no good reason why so many farmers should be without a good supply of fruits, both tree and vine, as is the case we find them in all parts of the country. The expense of procuring plants and trees is not large, if procured from a reliable producer of them. Too many are frightened out of buying them on account of the high prices asked by agents for some nurserymen. By purchasing direct, a far more reasonable price can be obtained. For a generous supply of fruit the following list will be found quite satisfactory. 12 blackberry; 25 Gregg black raspberry; 25 Cuthbert Red raspberry; 100 strawberries, either Williams or Nick Ohmer; 3 plants each Black Champion, Fay's and Cherry Currants; Columbus, Josselyn and Downing gooseberries; one each Moore's Early, Concord, Worden, Barry, Herbert and Brighton grapes; and if desired, trees might be added to the plot, in place of having them in the orchard with apples. Of peaches, where they can be grown, one each of Carman, Yellow St. John, Early and Late Crawford, Elberta, Bronson and Golden Drop; plums, one each, Lombard, Bradshaw, Imperial Gage, Reine Claude, Monarch and Satsuma; cherries, one each, Large Montmorency, English Morello, Windsor and Yellow Spanish or Napoleon Biggerau; pears, one each, Bartlett, Clapp's Favorite, Sheldon, Duchess, and Louise Bonne. If these trees are grown in the garden, they may have a hoe-crop grown among them, but in any event they must have good clean cultivation, as they will not grow satisfactory unless given the care that they should have.

In vegetable growing for the home, much pleasure and profit can be secured by a little extra effort. Early lettuce, radishes, and onions can be raised in a hot-bed, for using long before the out-door-grown article is ready. The expenditure of a few dollars for glass for the beds will be money well spent. If desired also, cabbage, tomatoes, pepper, egg plant, and cucumber plants can be started in the hot-bed for early setting. This work almost any farmer can do, and not have to rely on purchasing plants from

other growers. A small bed of asparagus is easily secured, either by purchasing plants or roots, or by growing them from seed. Horse Radish is procured from an old plot or roots procured from some seedsman. A good garden, should contain the following vegetables:—asparagus, peas, beans, beets, cabbage (early and late) carrots, parsnips, celery, cauliflower, lettuce, leeks, onions, parsley, peppers, squash, radish, turnips, tomatoes, horse radish, egg plant, some sage, savory or other herbs, and any other vegetable desired. To secure the finest tomatoes, they should be grown to a single stem, and tied to a stake driven in beside the plant, and when the plant is about five feet in height, should be stopped to allow of all growth going into the fruit. Melons may also be added where conditions are favorable.

In some gardens we find flowers interspersed through the vegetables, and this adds considerable to the appearance, but not every farmer can take the time for this part of the question. Where it can be carried out, however, the pleasure derived from such will recompense for the extra time employed. Dahlias, gladiolas, cannas as well as asters, marigolds and a host of other flowers, can be worked in in many places to advantage.

POTATO GROWING IN ONTARIO, AND A GENERAL REVIEW OF THE CONDITION OF THE INDUSTRY AT THE PRESENT TIME.

By H. B. Smith, B.S.A., Wanstead.

The potato is one of the most important food products of the civilized world. With a history dating back but little more than 300 years, it shows in that brief time a record of development unequalled by any other agricultural plant. Originally a native of the Mountainous tropic and subtropic regions of America, it was taken to Europe by the Spaniards early in the sixteenth century, and while it did not become popularized there so rapidly as here, it has during the last century become a staple and almost indispensable food with most European peoples. Nor is it important alone as a food necessity, for during the past fifty years vast developments have been made, especially in France and Germany, in the manufacture from the potato of starch for technical and commercial purposes and in the production of alcohol for light, power and fuel. Indeed in some European states the national policy is to encourage the manufacture of commercial alcohol from such sources as these in order that these countries may escape to some extent the importation of petroleum upon which a good many of them now depend for light and power purposes. It might be interesting in this connection to note that last year Germany devoted fifty per cent. of her potato crop to this purpose. That is to say seven hundred million bushels of potatoes, more than twice as many as were produced on the whole continent of North America, were used by these people in 1905 for the production of commercial starch and alcohol.

Potato growing takes rank right among the big agricultural industries of the present day. Pound for pound the civilized races, consume more potatoes each year, than they consume of any other agricultural product whatsoever. The world's potato crop in 1904, aggregated no less than 4,297,062,000 bushels, of which continental Europe and the British Isles produced 3,844,991,000. Asia 4,048,000, Australia and New Zealand 21,802,000, and North America 390,016,000 bushels. The Europeans are

the greatest producers and the largest consumers. Germany in 1904 produced more than four times as many potatoes as did the whole of North America. The world's potato crop averages every year a billion bushels more than her product of wheat. She produced last year just a little more than a billion bushels more potatoes than she did of corn, and just a little less than a billion bushels more than she produced of oats. Bushel for bushel the potato easily takes first place among the agricultural crops of the world.

Potato Culture in Europe: In Europe the potato crop is, relatively speaking, of greater importance for food and factory purposes than it is here. Its greater popularity there may in part be attributed to the success of maize as a starch producer here in America, and in some sense too, to the difference in economic and social conditions—land and labour values and food habits,—between the two continents. In Great Britain the potato is used almost exclusively as a human food, but in France and Germany, 40 or 50 per cent. of the crop goes annually to the production of alcohol and starch.

In continental Europe yellow fleshed varieties of potatoes only, are rated first class. These yellow varieties generally run a little richer in protein than the whites, but do not cook very dry at least not sufficiently dry to suit English, or American taste. As these yellow varieties are inferior for starch production purposes, the Europeans have developed a number of white fleshed varieties that run particularly high in starch content but which are almost worthless for table use. Hence it is that we seldom find any real valuable varieties among the potatoes that from time to time are brought into this country from Europe. The British market like our own, demands a white, dry fleshed potato. Hence it is from the British Isles that practically all imported varieties of any value come.

European methods of cultivation, management, etc., of the potato crop differ but little from our own. In general closer planting is practised there than here, and naturally more of the labour of cultivation, harvesting, sorting and so on is performed by hand. More attention seems to be given to the matter of seed selection than is given to that phase of the industry here, but their work is more along the line of importing stock for seed purposes, of changing a variety's climatic and soil condition, than of actually developing within the variety or strain itself, by a rigorous system of selection, those characteristics and qualities which are most desired and which should be perpetuated. For example, English growers find great merit for seed purposes in the stock imported from Northern Scotland and Jersey Island. The latter by the way produces the bulk of England's early supply, and prefers Scotch or English to domestic seed, while the Canary Islands, also large potato producers, bring in ship loads of seed from Germany annually.

Diseases similar to those which affect our own crop are well known in Europe, and the same remedies and methods of cultivation for combatting these diseases are in vogue.

Potato Culture in United States: New York, Pennsylvania, Wisconsin and Michigan are the great potato producing states. Maine, however, in proportion to her area devotes more attention to potato growing than any other state in the Union. Aroostock county, in this state, is the largest potato producer, and because of the influence which this county has had upon potato production in New Brunswick, and because of the extent to which the potatoes of that province have established themselves in Ontario, and affected directly potato production here, we shall describe the conditions under which

potatoes are grown in this state. The description is taken in part from Bulletin No. 58 of the U.S. Department of Agriculture, Division of Chemistry. "The soil of this county (Aroostock) presents a generally rolling surface, and is essentially of drift deposited during the melting of the ice after the Ice Age, resting on a stratum of limestone which in some places comes to or near the surface. The soil partakes in a general nature of the drift, containing a considerable proportion of sand and the usual amount of organic matter. It is therefore a soil peculiarly suited to the growth of potatoes—a soil which does not pack after hard rains nor during periods of draught. Its open, porous nature permits the free development of the tubers and the evolution of rootlets, both lateral and perpendicular. This soil was originally covered with a dense growth of hard and soft woods consisting chiefly of maple, cedar, birch, white poplar, spruce, hemlock and pine. The forest growth was dense and in clearing, large quantities of ashes were produced which fitted the virgin fields particularly for potato production. After some years of cultivation the fields began to lose their virgin fertility and potatoes are now grown in these fields with a liberal application of farm manures, or commercial fertilizers rich in potash."

Another noted American potato state is Wisconsin. Here in a little triangular area, the sides of which are less than 30 miles in length there produced last year more than 60,000 acres of potatoes. Just as an illustration of the importance of the potato industry in Wisconsin, and to give an idea of the development potato growing has made there, it might be mentioned that in 1904 there were shipped from Plainsfield in this district 1,925 carloads of potatoes, and from Hancock, less than 8 miles away, 1,600 cars were loaded.

There is some difference between the Eastern and Western States in their methods of cultivating and handling the crop, but not sufficient to be marked. At present the general tendency in America is to economize in the use of hand labour, to employ set cutters, planters, horse cultivators, power sprayers, diggers, sorters, etc., Potato growing is becoming more and more of a special line of farming, particularly in the great producing states, and the indications are that this industy in the future is going to become more and more specialized than now.

Potato Growing in Ontario.

The condition of the potato industry in this Province just at present is far from satisfactory. While Ontario stands first among the provinces of the Dominion in respect to acreage, total yield, and value of the potato crop, she did not produce sufficient last year to supply local consumption, and we were under the necessity of importing a good many hundreds of thousands of bushels of potatoes from the east. For a number of years there has been a steady and sustained decrease in the acreage annually planted to this crop in Ontario. Potato growing has ceased to be regarded as a money making business, and farmers generally are not only still further decreasing the acreage planted to this crop, but in a good many instances are ceasing to growing potatoes entirely. There are a good many reasons why conditions such as exist at present should obtain. Most of these reasons may be traced to natural or economic causes, and nearly all are amenable of entire or partial removal. It was to ascertain the cause of these present conditions that the writer first applied himself, hence it seems logical to discuss these causes here.

The causes that have likely induced the decrease in Ontario's potato crop during the past few years are:

(1.) Scarcity and high price of labor.

(2.) Blight during the past four or five years, most of which have been wet seasons.

(3.) Low prices for the six years, 1896-1900, inclusive, followed by wet seasons and the blight.

(4.) Comparatively low yields in older Ontario.

(5.) Many farmers are still growing old, poor-yielding varieties, many of which are very subject to rot, such as Beauty of Hebron, 39 per cent. rot; Early Rose, 28 per cent rot; White Elephant, 30 per cent. rot.

(6.) In some districts of the Province, on land that was originally well adapted to potato growing, potatoes have been produced so repeatedly on the same fields, in such close rotations, that the soil is depleted to a certain extent of some of its essential fertilizing ingredients, and will not now produce potatoes profitably.

We shall discuss these points in order and in detail.

I. Effect of labor scarcity on potato production. Farm labor in recent years has been steadily growing scarcer, higher priced, and less efficient. Ten years ago help was comparatively cheap, abundant and reliable. To-day we are paying an average of $21.61 per month for the same class of labor which in 1895 cost an average of $14.57, and at these figures a sufficient supply is unobtainable. Immigration, while it has tended to relieve to some extent the general labor scarcity, has not materially benefited the farmer. This scarcity of labor has affected every agricultural industry of Ontario, potato growing as much, if not more, than any other, since this crop is one that requires attention just at a season when other important work is pressing. Hence on farms where help is at a premium, and these kinds of farms are not by any means rare nowadays in Ontario, the tendency is to let the potato go and devote attention to lines in which so much help is not required. Just as an illustration of this general tendency, it might be mentioned that for no other obvious reason except the effect of labor scarcity on other crops, the area devoted to pasture lands in this province has increased in recent years by a million acres. Potato growing in Ontario is conducted to-day, at least so far as labor requirements are concerned, in precisely the same manner as it was practised here in the early days of last century. Farmers, in respect to this crop, have allowed themselves to remain altogether too dependent on manual labor. As well could we in these days produce the cereal grains after the methods of our grandfathers as grow potatoes in the ways now generally followed in Ontario. The potato industry in the future, if it is to be developed at all, can only develop through the adoption by our growers of labor-saving devices for handling their crops. To illustrate how labor-saving machinery will aid in bringing about this desired condition of affairs we shall quote one example. Down in the vicinity of Hamilton we know a grower who, without any help save at harvest time, produced last year no less than thirty acres of potatoes. He had solved the labor problem, as a good many other growers in Ontario will have to solve it in the near future if they are to continue being producers of potatoes. He used a complete outfit of planting, cultivating, spraying, and harvesting machinery, all of horse magnitude, and during the last year or two, with potato prices averaging away above normal and yields as a rule good, he has been making money in the potato business, and his entire outfit cost less than two hundred dollars.

II. The effect of blight under unfavorable weather conditions on the potato industry. For the past five years blight and rot have prevailed to an alarming extent all over Ontario. This widespread prevalence was due largely to the unfavorableness of weather conditions in every year from 1900 to 1905, inclusive, to the excessive precipitation during the season of growth, April to September.

The following table shows rainfall data for the growing seasons of the six years named:

Year.	Precipitation, April to September.
1900	15.4
1901	16.5
1902	19.4
1903	15.8
1904	19.9
1905	18.7
Average 1900-1905	17.6 inches
Average 1882-1899	14.9 inches
Average 1882-1905	15.3 inches

The growing seasons from 1900-1905, inclusive, have been excessively wet, averaging 2.7 inches more rainfall than the average for the same season in seventeen years previous. These exceptionally wet seasons were unfavorable to potato growing in three ways: First, the wet spring retarded planting and decreased the acreage put to this crop; second, they were peculiarly favorable to the development of the blight; and, third, the excessive moisture in the soil would have a tendency to produce rot, quite apart from that caused by the blight. This would be particularly the case on clay or clay loams.

The weather is one factor in production quite beyond the producer's control, but some of the conditions which it induces are quite controllable, as, for example, the blight. Blight during recent years has wrought much havoc in potato growing. In New York State last year it is estimated that the loss of more than 50 per cent. of the potato crop, which occurred then, was due to it alone. Here its ravages have been no less severe, neither do we think the percentage loss last year to Ontario potato crop was less than 50 per cent., generally speaking, but very little effort is made by farmers in this Province to offset its ravages. Altogether too many of the so-called intelligent people are prone to believe that it is useless to contend against such things; that blight and such "plagues" are but a visitation upon them of the wrath of the Almighty. Too many, despite the abundance of literature circulated gratuitously among them, are entirely ignorant of the nature of the disease which for the past few years has been destroying their potato crops, and few or, practically speaking, none at all, among the general farmers are doing anything, or have any idea that there are remedies which, if properly applied, will lessen or completely check its ravages. Acting upon the principle that it's an ill wind that blows nobody good, enterprising manufacturers have risen to the opportunity, and at various times have placed "blight cures" upon the market. Usually through the influence of the local salesman or agents, farmers have given these preventives a trial. Most of them, of course, were absolutely worthless, though a few, of which Bug Death is a good example, seem possessed of some value in controlling the disease. But usually the cost of these manufactured fungicides is excessive. Bug Death, for example, sells for $7 per hundredweight. One hundred

pounds per acre is the usual treatment, and where more than one application is required the cost comes rather high. But the great remedy for blight—Bordeaux Mixture—is practically unknown; outside the fruit districts its value as a controller of plant diseases has never been appreciated. Just so long as potato growers take no cognizance of and fail to apply the remedies that science devises and the best experience shows to be of value in controlling the diseases which affect this crop; just so long as the majority of our growers attribute blight, rot, scab, etc., to such causes as they are, on the back concessions of Ontario, usually attributed to, as, for example, lightning, the bugs, the use of paris green, changed climatic conditions, etc., etc.; just so long as such disinterestedness and lack of information as this prevails, just so long shall we find that in seasons of unfavorable weather conditions, or, in fact, in any season at all, blight, rot, and other diseases will continue to ravage our potato fields.

Of course, the failure to apply the proper remedies is not entirely due to the fact that farmers are unaware that such remedies exist. Such failure is in some measure associated with the scarcity of help. Undoubtedly were labor as abundant as formerly, farmers, as a class, would endeavor to treat their potato crop more carefully than they now do. But growers might as well cease believing that labor will ever again be as plentiful and cheap as it was ten or fifteen years ago. They might just as well begin now to console themselves to the fact that it is in labor-saving machinery, not in the laborer himself, that in future their capital must be largely invested. We believe, too, that as time goes on the potato in Ontario will cease more and more to be a general crop. In these days it is no business for the mixed farmer. It is the specialist in these times who is making money at potato production. It is the mixed farmer, the general farmer, the man who grows less than an acre of potatoes, perhaps only a few rows, who generally suffers most from blight and other diseases, who derives the smallest returns from his crop and who generally has the loudest complaint to make about scarcity of help. The conditions indicate that potato growing will, and should, become more and more a special line of farming.

III. Low prices, 1895-1900, inclusive, and the effect which such prices have had on potato production since. Low market prices, which means, of course, low net returns per acre, from 1896 to 1900, followed from 1901-1905 by wet seasons, general failure of the potato crop by blight, rot, etc., had a very natural tendency to drive growers from the business. We reached high-water mark in potato production in 1895, when our total product aggregated 29,390,884 bushels. Now, Ontario, by approximate estimate, consumes annually between fourteen and fifteen million bushels of potatoes. In 1895 the potato crop all over North America was unusually heavy. The United States produced in that year more potatoes than she ever produced in any single year before. She produced fifty million bushels more potatoes that year than she has ever been able to produce in any year since. With nearly twice what we required for our own consumption produced at home, with the American market, where formerly our surplus stock was disposed of, glutted likewise by overproduction in that country, it is only natural that potato values should suddenly shrink. It is only natural, too, that low prices prevailing for two or three years in succession should drive men from the potato business. Supply and demand fix the price in potatoes, as they fix it in everything else, except, of course, those commodities the sales of which are controlled by trusts, or the production of which is affected by the exorbitant cost of labor; hence when the visible supply of stock showed a sudden and unusual increase, and the demand stood practically the same, potato

prices were bound to fall and to keep right on falling all the time until equilibrium between these two great controlling forces was again fairly established. The following tables show the market and acre value of the potato crop in Ontario, 1895-1900 and 1901-1905, inclusive:

Year.	Price per bushel.	Value per acre.
1895	20.2 cents	$32 15
1896	26.2 "	31 19
1897	39.9 "	37 94
1898	44.1 "	37 26
1899	32.8 "	38 88
1900	26.1 "	34 32
Average 1895-1900	31.5 "	35 29
Average 1882-1895	41.3 "	49 21

It will be noticed that every year between 1895 and 1900 was below the average value per acre for the period 1882-1895, and in every one, save 1898, the price per bushel likewise was below the average for the preceding thirteen years.

For comparative purposes it might be interesting to notice the value per acre and price per bushel of the potato crop since 1901. The figures used may not seem to bear out all that we have been saying about supply and demand being the controlling factors in production, and that enhanced values and greater returns per acre from any crop naturally induced increase in its production. Since 1901, in the face of the facts which show remarkable increases in acre values and bushel prices, there has been a most remarkable, and from an economic standpoint most inexplainable decrease in the acreage planted to the crop. Between 1901 and 1905, blight first appeared seriously in Ontario potatoes, and though prices and values have ruled higher than the average the uncertainty year by year of harvesting a crop, detracted from the enterprise. In the table below are the average values per acre and per bushel since 1901:

Year.	Price per bushel.	Value per acre.
1901	42.6 cents	$50 06
1902	56.5 "	50 52
1903	44.9 "	52 92
1904	50.7 "	58 81
1905	46.0 "	49 68
Average 1901-1905	48. "	52 39
Average 1895-1900	31.5 "	35 29
Average 1882-1900	39.2 "	45 50

IV. The effect of low yields on the potato industry. All over Ontario for the past five or six years the yield per acre of potatoes has been comparatively low—too low, in fact, to warrant even a continuation in the industry, let alone any increase in planting.

V. Many farmers are growing poor, low yielding varieties, most of which are subject to rot. From an examination of the returns of some 200 experimenters in different parts of the province in 1906, the following varieties, in order, were most favorably spoken of. Since then, from what we could learn on this point in our investigations, we are convinced that the figures are sufficiently correct for comparative purposes:

Name of variety.	Percentage grown.	Percentage rot.
Empire State	20.0	23
White Elephant	11.3	30
American Wonder	8.8	24
Beauty of Hebron	7.5	39
Rural New Yorker	6.9	26
Pearl of Savoy	5.6	27
Early Rose	3.7	28

That is to say, 64 per cent. of the farmers of Ontario are growing varieties of potatoes that average very high in percentage of and susceptibility to rot. We are not going to add anything more on this point. Full information as to what are the best yielding and most immune to rot varieties of potatoes is available to every grower in Ontario. The results of hundreds of potato experiments conducted at Guelph and Ottawa have been published and freely distributed from time to time. We refer the reader to them for such detailed information.

VI. Have some Ontario potato soils become depleted of some of their essential fertilizing ingredients? We have discussed causes of acreage decrease under five heads, and covered all possible grounds pretty fully. Part of the decrease is, of course, attributable to the blight, to the unfavorable weather conditions, and to insufficient cultivation and attention due to labor scarcity, but over and above all this there seems to be, particularly in the older growing potato districts, as around Hillsburg, Erin, and Orangeville, a general idea among growers that the soil will not produce as large yields as formerly; that they have grown potatoes too long. The fact that the potato land in these districts is a fairly light, sandy loam, that potatoes year after year have been grown on this same soil, with no return in the form of fertilizer excepting barnyard manure or an occasional crop of clover plowed under—both of which are nitrogenous fertilizers—would seem to indicate that there might be some deficiency in the mineral constituents, most probably potash. It has been the experience in all countries where potato growing is largely followed, in Maine and more lately in New Brunswick, that potatoes grown on the same soil in short rotations with cereals and legumes, tend to deplete a soil of its potash and, to a less extent, of its phosphoric constituents, and unless these elements be added in one form or another potato growing in the course of some years must be abandoned. In Aroostock County, Maine, as we pointed out, potato growing is not now attempted without the use of what are locally known as potato manures, fertilizers rich in potash compounds. More lately still, in New Brunswick, the same necessity has arisen, and more commercial fertilizers are now used in that province annually in potato growing than are sold for all purposes in a year in Ontario. The best of our potato soils resemble those of the east very closely in physical character and constituents. Originally they contained a sufficiency of potash for all ordinary production purposes, and this supply was still further augmented by that derived from the clearing off of the forests, but potatoes are especially exhaustive of this plant food, they make no return whatever to the land, and this production for so many years has tended to impoverish those fields to such an extent that they do not now yield sufficiently to make potato growing profitable.

Present Condition of Potato Growing in Ontario.

A general review of what is being done in potato growing in this Province just at present will now be attempted. This review will be taken up

district by district, and will cover the most important potato producing sections visited. Eastern Ontario districts, it will be noticed, are not very fully taken up, not because potato growing there is any less an important industry than it is in the west, but simply because from what we did observe, potato conditions in Eastern Ontario are identical with those in the west; hence a description of one's condition would be in a fair measure a description of the others. Therefore, for the sake of expediency, we gave most attention to the west. The methods of cultivation and management of the potato crop of one or two of our best growers will be given in detail. The remainder of the information was derived from the potato shippers in each district, from the growers themselves, and from our own observation.

Strathroy District. Carodoc Township, and to a less extent the Townships of Delaware and London, in West Middlesex, form one of the most important potato districts of the western peninsula. The soil of Carodoc is almost ideal for potato growing, being a medium sandy loam, well supplied with organic matter, early, easily worked, easily drained, suffers little from drought, and does not "bake." In Delaware the soil runs swampy and fewer potatoes are produced. In London the soil is slightly heavier, and this crop is less extensively cultivated.

The Dooley is the favorite late variety. It is believed by some to be a variety originated by selection from either the Carmen or Rural New Yorker. It is a late potato, spoken of as fairly immune to rot, looks good, sells well, but lacks a trifle in table qualities, being wet and off color until late in the season. Empire State, North King, and Dewey, together with a good many others, are also grown. The first two named are favorably spoken of for productive and market purposes, but Empire State is generally believed to be rather too subject to rot. The Irish Cobbler is largely used as an early variety.

Methods of Planting and Cultivation. Clover sod seems the favorite potato soil, but opinions differ very widely as to what preparatory treatment gives best results. Methods of preparation differ with the man and the system of planting which he practices. As a rule, the more thorough this part of potato growing is attended to the better the results that are obtained. We shall indicate a couple of planting systems just to illustrate this phase of potato growing.

1. *Shovel Method of Planting.* The land is given thorough preparation, and marked off in three-foot squares. A shovel is used for opening the hills. The digger opens his first row of hills and simply throws the earth to one side. The planter places one or two sets in each hole. When the second row is being dug, the man with the shovel covers this first row of seed with the earth from the second row of hills. The planter follows him closely, and when the last row of holes is opened only one row of seed remains uncovered. This is a fairly rapid hand system of planting; the rows "run" both ways, which greatly facilitates future cultivation.

2. *Plowing the Potatoes In.* In planting in this way sod or stubble land is simply plowed and the tubers dropped in every third or fourth furrow. This method, while much quicker than No. 1, gives the land no preparatory treatment. The rows run in one direction only, and if weeds are bad, hand hoeing must be resorted to. With this system some apply their manure in the winter; and in May, when the clover, or, if it is a stubble field, the weeds, have been stimulated to some growth, the field is plowed down and the seed placed in every third furrow. For both these planting methods clover sod is the favorite soil, and after that wheat stubble would be first choice.

Cultivation. Cultivation, most growers admit, is insufficient, chiefly because of the difficulty in getting help when the cultivation requires attending to. The general tendency here seems to be to "hill up" slightly, in preference to level culture; but, so far as we could learn, as good results are being attained with one system as the other.

Potato Diseases. Blight (Phytophora infestans). The common, late blight of the potato has prevailed here to no small extent in recent years, but very litle seems to have been done to combat or prevent it. Only one grower —Mr. Creely—owned a power spraying outfit, and treated his crop with Bordeaux Mixture. He was meeting with satisfactory results. Most of the other growers professed being too busily engaged haying and harvesting during blighting time, and preferred letting their potatoes take chances with luck and Providence. This is the great trouble in all mixed farming sections. Farmers "sidetrack" potatoes every time anything else requires the doing. They are quite aware of the fact that potatoes in the last few years, where they have been a good crop, have paid handsome profits, but at the same time they continue year by year to neglect the potato crop when haying season comes around and while all profess utter inability to find help to attend to their potato crop, which they know, if successfully brought to maturity, will yield them anywhere from sixty to one hundred dollars per acre, they never fail and by some means or another get sufficient help from somewhere to harvest their timothy hay, which in some exceptional years may yield them fifteen dollars per acre. We are convinced, after extensive observation and enquiry, that while the scarcity of labor is a probable cause of decrease in potato growing, it is not yet sufficiently acute to be accepted as a reason for neglecting the potato crop entirely.

It is the mixed farmer who invariably feels this labor scarcity most, and mixed farming and potato growing never go successfully together. Whoever it was that originated that old saying that the great advantage in mixed farming was that you did not require to have all your eggs in the one basket and got his idea made the basis of agriculture all over this continent, may have been wise enough in his own generation, but were he alive to-day and could travel over some of the back concessions of this province, he might find, in so far at least as potato growing was concerned, that the men who are living up to his ideas and practising the principles which he and the likes of him promulgated, have, as a rule, more empty baskets sitting around their premises than those who centre their energies on one or two things, and have fewer baskets to attend to and more stuff to put into the ones they do attempt to fill. In Ontario at the present time the man who is making any success at potato growing is he who is making the business more or less a specialty.

Harvesting, Yield, Storing the Crop. Harvesting here in Carodoc is mostly performed by hand labor. The potatoes are either turned out with a plow or dug with a potato fork. Creely, if we remember rightly, has a digger. The average yield in 1906 would be about seventy-five bags per acre. Farmers, as a rule, like to sell direct from the field at digging time, but the bulk of the crop is stored and sold during the winter. Pits in the field, bins arranged in the basement of barns, and the cellars under dwelling houses are used for storage purposes.

Marketing. Last year about 75,000 bushels were shipped from here. A good part of Carodoc's crop goes, of course, to supply the London market; the remainder is shipped west into Essex, Kent, and Lambton, to such towns as Chatham, Windsor, Tilbury, Petrolea, Sarnia, and Wallaceburg. In the fall, when shipments are made direct from the field as the crop is being

harvested, no attempt is made to grade the tubers to size, nor is anything like this expected by the shipper. Potatoes are taken just as they are picked up. When a shipper desires to load a car he goes out to the farmers of the district and makes arrangements to have the goods delivered. Fifteen or twenty farmers will be loading into the same car at once. Each of these men, it may happen, will have a different variety of potatoes. Two or three will be hauling in the Dooley's, some others Empire State, some more will have an early variety, probably the Irish Cobbler, or such late varieties as Hebron and Elephant, while quite a number of others are just loading in "potatoes." They are not certain whether or not they are of any particular variety. All sizes, shapes, color, and quality of potatoes are in evidence, mixed together in the most inseparable manner, and when they reach the consumer they are mixed quite as inseparably in the peck or half bushel which he purchases at the corner grocery, a sample of every variety of potatoes grown in the district from which this particular car lot comes will be served up before him on his table. To market our stock properly is one of the most important things which our shippers and growers require to learn, and we are afraid that it will require a whole lot of educational work, as well as co-operation between the grower and shipper before Ontario potatoes will be placed on the market in the condition and form in which they should be marketed.

St. Thomas, Union, or Port Stanley District. Commencing at Union, or White's, on the P.M.R.R., about six miles north of Port Stanley, a strip of sandy loam begins, and continues eastward through Yarmouth and Bayham Townships to Houghton. All through this section the soil is almost ideal for potatoes, and some quite large acreages are grown east of Union. Many of the hundred-acre farms produce from eight to twelve acres every year. Varieties are mostly Hebrons, Empire State, White Elephant, and Carman. Cultural methods generally resemble those of the Carodoc district very closely. Part of the crop is marketed locally—that is, in St. Thomas, though quite a few car lots are shipped east and west. Spraying for blight is not followed, though the disease prevails to quite an extent. Paris green, dry or in solution, is the general insecticide. Yields average about 100 bags per acre.

Elgin and Norfolk Counties. In the southern portion of Malahide Township, in Elgin, and in the townships that adjoin it on the east and, continuing onward toward Simcoe, there is a strip of sandy soil, well adapted for potato growing, but on which the crop for various reasons is not generally grown. One of these reasons, we were told, was that shipping facilities were not good, that from these fields the distance to railroads was too great. Others professed being unable to raise the crop successfully because of blight, and others couldn't get sufficient help to handle a large potato acreage. Eighteenth century methods largely prevail. One of the apparently most successful growers through all this district was Mr. Oscar McKenney, of Aylmer. Mr. McKenney, we were repeatedly told, was the most prominent grower, and when we interviewed him we found that he had so many new and (tons at least) original ideas on the potato growing business that we have selected his as one of the two systems of management which we are going to outline in detail.

Mr. McKenney engages quite largely in potato growing, and plants annually about eight acres. His crop is managed by an 82-year-old man—an Irishman, by the way—who claims to have done nothing all his life but grow potatoes. The results indicate that he has learned potato growing pretty thoroughly. Mr. McKenney's methods are about as follows:

As early in the spring as is practicable—this year he expects about April 12th; (Mr. McKenney planted his potatoes on April 11 and 12, 1907)—he plants his potatoes. He prefers and always uses a sandy loam soil. The preparation is to plow down a well manured clover sod in the fall, cultivate this soil thoroughly and early in the spring, and put in the seed at the earliest possible date. In the way of fertilizers, he uses nothing but horse manure. Ordinary farmyard manure he would use in no circumstances whatever. He attributes the prevalence of scab in potatoes largely to the use of cow manure. The field is marked off both ways, the rows being three feet eight inches apart and the hills three feet apart in the rows. A plow is used for planting, the rows being opened four or five inches deep, and the seed dropped at the point where the cross rows intersect the furrow. The seed is covered up level, and is on an average about four inches deep. Nothing but the largest, strongest looking tubers are used for seed. In cutting the sets the seed end of the tuber is discarded, as it is likely to produce too many stalks and too many small tubers. The sets are cut good and large, with one or two eyes each. He likes to have the pieces good and large, so as to supply plenty of nutrients until the plant gets to the surface of the soil. Not more than two sets are put in a hill. Too much seed, he believes, causes too many small potatoes. Cultivation is done by scuffler and hoe, as frequently as the crop or season requires.

It is in the matter of insecticides that Mr. McKenney's ideas and practices differ most widely from the average grower. He uses no paris green or "bug poison" of any kind. His practice is to engage youngsters to pick off the "shell backs" just as soon as they appear in the spring. Living near town as he does, he can get this kind of help quite easily, and by paying a certain fixed price per hundred beetles captured he can get good work done all the time. The picking is done into pickle bottles, each supposed to hold a certain number of "shell backs" when full. Having got after the promoters of the bug business in this way, few eggs are laid and few larva appear. Neither does Mr. McKenney use Bordeaux or anything else for the blight. His ideas on this disease sounded strange to us, and were he a less successful grower we would regard them as pure nonsense. The fact, however, that he is now growing potatoes and has grown them all these late years, while his neighbors on the same land and just across the fence, lose from one-third to one-half their crops annually, makes his ideas of some importance and his methods of some significance. Blight and its accompanying condition, rot, he attributes to the use of paris green. The green gathers at the junction of the leaf petiole and main stalk, poisons the plant, as it were, and leaves it easily affected by disease. We are rather doubtful if this is anything more than theory; in fact, we feel certain that paris green, if properly applied, can neither cause blight nor yet injure the plant to such an extent that it is more susceptible to the disease. We are inclined to think that the real reason for Mr. McKenney's success is that he plants extremely early, uses strong seed, and gets a strong, vigorous plant, well grown before the season for blight really occurs.

In the matter of varieties Mr. McKenney grows quite a number, since he exhibits his goods largely at local fairs. Among the best of these are Great Divide, Early Sunrise, Carman No. 3, Boston Market, Bovee, Russet, and Rose of Erin. Of these for a general crop potato, for sandy loam soils, Carman is preferred. It grows large, yields well, is smooth, fairly shallow-eyed, and free from scab, warts, and protuberances. Potatoes are stored in pits in the field and in cellars.

In Elgin County, Yarmouth is the only township of any importance as a potato producer. The northern part of the county is not at all adapted for potato growing.

Norfolk County. In Norfolk County, at least in the southern part, the soil is fairly well adapted to potatoes. The potato here cannot, however, be regarded as a very important crop. The prevalence of blight in recent years, together with the great development of the fruit industry, has caused farmers to pay less attention than formerly to potatoes, with the result that whereas ten or fifteen years ago a good acreage was grown and shipped, the average now would not be one acre per hundred. Apple growing is more profitable industry and, on the average, surer. But the only reason it is any surer is that farmers here have learned the necessity of spraying to combat the diseases and insects that affect fruit, while they give no such attention to the potatoes. Potato spraying is not practised to any extent, though farmers are quite aware of the value of Bordeaux in controlling the blight. Some years ago an object lesson on the value of spraying was given on the fair grounds by the Simcoe Agricultural Society, and seems to have had some results—at least, it showed clearly that there was a remedy for blight. All varieties are grown here, and most farmers with an acre or two are growing five or six different varieties, generally so badly mixed that they don't know what they have. White Elephant is as common as any, together with Beauty of Hebrons and Carman No. 3.

Brant County. Brantford Township—at least, that portion of it lying to the westward of Grand River—is the principal potato producing section in Brant. The soil is a sandy loam, well suited to potato culture. Mount Pleasant (Mohawk P.O.) is the centre of the district and the main shipping point. From this station last year about twenty cars were shipped, principally to Western Ontario, Chatham, Windsor, etc., at an average price per bag to the farmer of 65 cents. Carmen No. 3 is the main cropper, though here, as elsewhere, every variety is grown. Shippers here, in common with all the rest of their class in Ontario, complain much of the difficulty in getting farmers to grade their stock properly. There seems to be among all farmers an inherent tendency to try and load anything that looks like a potato in the cars. The very natural result is that Ontario stock always sells for an average of 10 or 15 cents per bag less than the better graded stuff from New Brunswick.

Rot has prevailed around here to some extent, though apparently not quite so bad as in some other places. No spraying is done except for bugs. Bug Death is sometimes used as an insecticide and fungicide with good results, but its cost is too great for it ever to come into general use. Yields in this neighborhood run about 100 bags per acre. J. C. Biggar is the best grower here.

Owen Sound and Wiarton. In Northern Grey, Derby is the principal potato producing township. Around Owen Sound—that is, within four or five miles of town, west or south—the soil is sandy loam on a limestone bottom, naturally well drained, and good potato land. Farmers, though, are not very heavily engaged in the potato business. One, Mr. W. L. McHardy, has grown as high as twenty acres, but the average is not more than one. The acreage is increasing here, however, as just now farmers are finding out that profits from potatoes cannot be equalled by any other crop. The yield varies with the grower, but will average about 100 bags per acre. Some talk about getting 150 bags per acre, but farmers, as a rule, have little idea what their crops are yielding. Their estimates are usually little better than guesses.

Owen Sound offers a fair market, particularly during the fall, when the supplies are being shipped out to the lumbering camps along the north shore. The potato crop on Manitoulin Island affects this market to some extent, and in case of a good crop there values in Owen Sound are likely to be low.

Most growers are using old varieties, such as American Wonder, White Elephant, Early Puritan and Early Canada. The early crop is of considerable value here, as the C.P.R. steamers and other boats going up the lakes, get their supplies here during the navigation season. Rot prevails to some extent but the best growers control the disease pretty effectually with Bordeaux. One of the largest growers in Derby, uses no fungicide, believing it injurious to the crop. Too many farmers, it seems to us, develop erroneous ideas in respect to Bordeaux and Paris Green. The grower in question, used it only one season and made four applications. The trouble with him was that the fungicide kept the tops green too late in the season, the crop did not mature properly, the potatoes went off quality before spring, and he suffered some loss in consequence.

Around Wiarton the soil on the average is a fairly good potato soil but potatoes are not a very important branch of agriculture. The average acreage devoted to the crop per hundred acres would be about ¾ of an acre. All varieties, and nearly all possible combinations of varieties, are used. For early cropping the Early Ohio is favored, and as quite a business is done here, in early potatoes, with the numerous summer resorts along the lake shore, some farmers plant quite largely to early varieties. For main crop Empire State is the common variety with Beauty of Hebron, Late Rose, White Elephant, American Wonder, etc., etc.

Planting here is generally delayed until rather late in the season. Farmers generally, planting late to avoid the bugs. Spraying is not practiced to any extent. Mr. Cecil Swale the largest grower in the district is the only man we know of who uses Bordeaux. His experience in its use was highly satisfactory. He sprays about three times per season, uses an ordinary "squirt gun" sprayer, mixes his solution after the well known 4-4-40 formula, and has always had profitable results. His average yield year in and year out is 200 bushels per acre. From what we could learn of the district generally, unsprayed crops were vielding about 100 bushels per acre. Mr. Swale estimates the cost for spraying, materials and labour of applying, at about five dollars per acre per season.

Orangeville District including Erin, Hillsburg and Garafraxa. Orangeville, and all other potato districts around here, are situated in the belt of high land that stretches right across Ontario from Niagara to Georgian Bay. All this area is more or less adapted to potato growing, but around Orangeville the business has been most largely developed. The district is supposed to be the best for potato growing purposes of any in the province. In former years it was from here that Toronto drew the bulk of her supply, and thousands of bushels also found a market on the other side of the line. But in recent years all this has changed. Toronto dealers have ceased buying here almost entirely and the Americans no longer look f r any of their supply in this direction. The principal market for Orangeville potatoes nowadays is Western Ontario, London, Chatham. Leamington, Windsor, Sarnia and Petrolea. About 60 cars were shipped from this point last year at an average price to the farmer of about 70 cents per bag. A good yield is one hundred bags per acre. This yield however has seldom of late years been obtained.

Rot prevails to a very dangerous extent but farmers spray for nothing save the beetle. They are backward too, in the matter of appliances for handling their potato crop. Diggers are unknown, planters are not used at all, and spraying outfits generally very primitive in their character. Few farmers are now growing more than an acre or two. Five acres is considered a very large acreage. Mono township is the main potato producer up here.

Hillsburg. Hillsburg used to rank as the centre of one of the very best potato districts in Ontario. From this point, until within the past few years, from 150 to 200 cars of potatoes would be shipped yearly. Now about 20 is the usual output. Farmers who formerly grew from 10 to 20 acres now average less than two, and the acreage planted is still annually decreasing. The causes of this decrease are the same as are general over the province, viz., the blight, and the scarcity of labour. Farmers around here are altogether too dependent on manual labour in potato growing. They are not using any labour saving machinery such as planters, sprayers, harvesters, etc. Hence it is that the labour scarcity affects these people so greatly. In the matter of spraying for blight, nothing has been done. Lack of help is advanced again as the common excuse for this. But generally speaking, farmers who advance such excuses as this for not spraying, who are appalled at the labour required to spray with Bordeaux three or four times during the season, belong to that class of growers whose experience in "spraying" in confined to the watering can system, and who always estimate the labour required to spray by the amount that is required to sprinkle a field with a two gallon sprinkling can. Men who use proper spraying outfits, such as will cover 15 or 20 acres a day, seldom have much to say concerning the scarcity of help.

Farmers here seem "tired" of potato growing. Hillsburg has for years been a heavy potato producer and the soil seems to be less productive than formerly. Farmers are beginning to be careless, some spray for the bugs and some let the bugs have the crop. Many claim that the potatoes are too hard on land, that they make no return to the soil. To this argument of course there is much reason. Yields have undoubtedly decreased in recent years. The soil here is sandy loam, naturally it would contain but a relatively low percentage of potash and phosphorus. Potatoes require quite large amounts of these constituents in their growth. Hence a soil fertilized only with stable manure or clover, might by this means become deficient in the mineral constituents of plant growth. This objection is general in this locality.

In the matter of varieties nothing but old, poor yielding kinds are grown, White Elephant, Burpee's, Woodhull, Pearl of Savoy and Hebron are the leaders. A variety named Carters is grown to some small extent in the belief that it is "rot proof." It's a failure. Planting is done about May 24th. Planting and handling the crop is a laborious business, farmers have no machinery at all, and despite the fact that the farmers of this district have been accustomed to grow thousands of bushels of potatoes each year, few of them have any easy way of storing and handling their product. The crop is largely stored in cellars beneath the dwelling houses. The bags as they are brought in from the field are emptied into these places and when required the stock is rebagged by hand and carried out again.

Farmers here learned potato growing in the days when labour was abundant and cheap, as a class they seem well satisfied with the methods followed. They seem slow to adopt new ideas, and in fact very few but their own ideas ever seem to have been promulgated among them. Hence it is while methods of potato growing have changed greatly within recent

years, methods employed here are the same as were in vogue in the old days, the days when Hillsburg potatoes were the best that found their way into the Toronto markets, when "the buyers from the United States came down through Erin and Garafraxa to get supplies for Buffalo and New York." That men could be engaged in potato growing, as something of a special line of farming for years, yes for whole decades of years, and still know so little of the diseases and the treatment for these diseases that affect this special crop, is a matter of surprise. This is the first district, in fact the only district we have visited, or known in Ontario, where farmers had not heard something of such well known fungicides as Bordeaux mixture, and where some at least had not used the same. The Hillsburg, Erin and Orangeville districts are perhaps in potato growing the most backward districts in Ontario.

We have covered quite fully the general conditions of the industry in the province. There is a terrible sameness in these conditions and sufficient has already been said regarding them. Before proceeding to the next phase of our subject we shall give in detail an account of the methods by which one of the very best potato growers in Ontario is averaging each year more than one hundred dollars per acre from this crop. This grower's methods differ widely from those of the other we described, and we insert them here because they are of the kind that will have to come into more general use if potato growing is to be followed as a profitable industry in Ontario. This grower is Mr. Noah Diamond of Jerseyville, Ont.

Mr. Diamond makes a specialty of potato growing and plants from 30 to 50 acres per year. His land is a trifle heavy to be called an ideal potato soil, but by using farm yard manure and plowing down clover he keeps it in condition for producing large yields of this crop. The variety used until this year was Empire State entirely. He begins planting about the end of April and tries to get all in as early as possible. He selects the largest tubers for seed, cuts to sets of two eyes each, plants in rows with a planter; in fact does all work in connection with the crop by machinery. Last year he treated his crop seven times with Bordeaux mixture and used in the treatment 1,400 lbs. of bluestone. The whole work of caring for the potato crop is done by one man, except at harvest and seeding time. Average yield one year with another 230 bushels per acre, and average returns per acre from one hundred to one hundred and fifty dollars. Mr. Diamond considers that no crop which he could grow would yield anything like such returns as this, in fact believes that at half the present prices it would be the best paying line in which he could engage. He markets quite a quantity of his crop by waggon and carload in Hamilton, sometimes ships some west to London and other western centres.

Despite Mr. Diamond's success in this line other farmers in Jerseyville district do not engage very extensively in the buisness. The old excuse is as usual, advanced that potato growing makes too much work, in these days of labor scarcity. Machinery has made it possible for the specialist to continue in the business and even to increase his acreage largely without increasing the help required, but to the ordinary farmer a full equipment of implements comes rather expensive. In fact the cost under this head to the man growing an acre or two is practically the same as to the man who grows forty or fifty.

Some of the good potato districts in Ontario not yet mentioned are here given. Hepworth, up in the Bruce Peninsula, the centre of a very productive little section. Soil is well adapted for the growth of the potato and farmers seem to be increasing the acreage devoted to the crop. The con-

dition of the industry there, generally speaking, is the same as elsewhere.

Dublin, north of Stratford ships a few potatoes and some few are grown in the section around it.

In most of the townships around Hamilton and north west through to Brantford, potatoes seem to be quite largely grown.

Another little district where the cultivation of this crop is about as well advanced as any place we know is at Acacia, south of Tilsonburg. Soil is ide l and farmers seem to be taking an intelligent interest in the industry.

Then in the north, that is north of Orangeville, and right through to Georgian Bay, around Shelburne, Angus, Alliston, Mono Mills, and up around Allandale, Barrie and Penetang, potatoes seem quite largely grown. The little district about Angus is the best in all Ontario. The industry is in better condition there and better stuff is being shipped out of Angus just now than is being turned out of any other shipping point in Ontario.

Quantity and Quality Required and the Source of the Potato Supply of Some of Our Largest Markets.

Toronto.

Quantity required: From 2,000 to 3,000 bags per day, which amounts to at least 30 cars per week, for every week of the year.

Quality required: A large, white, thin skinned, sl. llow eyed kind, free from dirt, rot, scab and sunburn, must be dry cookers and car lots should always be graded to size and if possible of one variety only. Red potatoes are sold only during the new potato season in June and July, when Early Ohios fill the demand. The New Brunswick Delewares are favorites at other seasons.

Source of Supply: From about the middle of September of each year until the new potato season begins in May or June, the greatest portion of the city's supply comes from New Brunswick, from a certain district near the Maine border, and of which Woodstock, roughly, is the center. During this season, for the past three or four years little but Eastern potatoes are received. Relatively speaking only a few car lots of Ontarios are used, and these that are marketed here come mostly from Allist n, Uxbridge, Erin, Hillsburg, Angus, Bellwood and Orangeville. Some potatoes from such local points as Clarkson's, Port Credit, Lorne Park, Dixie, etc., are marketed during the winter in waggon loads, but at least 80 per cent. of the potatoes consumed in Toronto during the months from September to June, or from 800 to 850 carloads, come from New Brunswick. Some seasons quite large importations of Quebec stock may be made by local wholesalers, but very little of these are consumed in the city, the great proportion being unloaded on to dealers in the smaller towns who buy in car lots from these Toronto people. Sometimes too, Nova Scotia and Prince Edward Island potatoes are quoted during the winter, but very few are sold in Toronto, at least not in recent years. "Old" potatoes remain in the market usually until July or August, a certain demand existing for them among hotels and restaurants.

In May the American new potatoes come in, the first to reach Toronto are usually from Texas, of a variety known as the Bliss. They are sold by the barrel. In July, or sometimes earlier, local gardeners commence bringing in their stock. These potatoes have been "sprouted" in green houses or cold frames and given a good start before planting, they are gotten into

the soil as early as possible, as the first stuff to reach the market is worth from three to four times the average for the season.

Below is a summary of remarks made on the potato business of Ontario and Toronto by two well known potato dealers of the city.

Mr. J. J. Ryan handled last year from October 1st to April 1st, an average of one car of Maritime potatoes per day. Had "turned over" last year in all from 180 to 200 carloads from New Brunswick, and less than one car of Ontarios. New Brunswick stock was always larger, cleaner, and contained less scab and rot than Ontario grown potatoes, and readily sold for from 10 to 30 cents per bag more than our stuff. Just at that time (March 12) Ontarios were selling in car lots at 85 cents per bag and New Brunswicks at $1.15.

Our potatoes nowadays are poor sellers, and the consuming public do not want them. The quality of the potatoes has remained about the same; but as Mr. Ryan remarked. "The people of Toronto can afford to eat good potatoes, they've got the price to pay for them and we'd be foolish to offer them anything else." Five years ago he drew all his stock from this province, but now he did not want to see an Ontario potato in his stock. His chief objection to Ontario stuff was that farmers and shippers in loading cars did not keep the different varieties separate: they never graded their stock to size, they simply filled the car with anything and everything that looked like a potato, and never seemed to care whether or not a buyer ever went back for another load. It is impossible too, to buy very many carloads in an average Ontario town, usually one or two cars cleaned up the available supply. From New Brunswick, on the other hand, more than one variety was seldom shipped, and they were never mixed in the same car. The shippers or farmers graded to size, and their goods were always pretty free from dirt. He could depend on the quality of every potato from New Brunswick and could send orders down to lots of towns in that province and get a car a day all season. Mr. Ryan, professed favor for Ontario potatoes on purely patriotic principles, and would prefer spending his money in his own province, but there was no longer any use offering Ontario stock in Toronto. He had sold to a number of farmers at Uxbridge, the Delaware potato for seed last year, and from some had bought the resulting crop at an average of fifteen cents per bag more than market prices for Ontario's. He believed this variety would thrive well here, and if properly attended to produce potatoes of a quality equal to Maritime goods.

Mr. Vance, of Vance and Company, dealt heavily in potatoes and got his entire stock from New Brunswick, from a certain small district in that province of which Woodstock was the center. The Delaware was the only variety he used. He had handled a couple of cars of Michigan's (Rural New Yorkers) this season but preferred the Delawares to anything else he could get. This variety of potato seemed to exactly fill the requirements of the Toronto market. Mr. Vance attributed the general good satisfaction these Eastern goods gave, to the fact that the farmers down there are specalizing in potato growing, many of them depending on this crop entirely for the greater part of the revenue of their farms. The three largest potato producing counties in New Brunswick are Carleton, Victoria and York, adjoin the county of Aroostock, Maine. This county for a great many years, together with the Canadian counties beside it, have been supplying the potato trade of the large American Atlantic cities, Philadelphia, Boston and New York. These growers have learned how to grow good potatoes and shippers have had foresight enough not to ship dirty, rotten, small, ungraded goods. Because of a glut in the American market about five years ago these

New Brunswickers lost their old market and turned to Quebec and Ontario. Here the superior quality of their goods, their superior knowledge of the potato business, quickly enabled them to drive out all competition in the potato markets of Quebec and Ontario, but particularly of Montreal and Toronto. It is now about five years since these potatoes came regularly into the markets of Toronto. At about the same time the blight began to work its ravages in the Ontario crop. The Eastern potatoes came in a clean state free from rot in car lots of one variety, graded to size, and had no difficulty in capturing the market here. At present people do not want Ontario potatoes at any price. They've got accustomed to the large white article shipped in by the Maritime grower and do not care to invest their money in the rather too seedy looking Ontario goods.

Railroads too, Mr. Vance maintained, aided the Maritime shipper. Last year the C.P.R. company put in 200 specially designed and specially constructed potato cars, for this trade alone. In this connection we might note ourselves, that in freight rate the New Brunswick shipper has in proportion to the length of haul a very decided advantage. It costs the Eastern shipper 22 cents per cwt. for the 800 mile haul from Wood ock to Toronto, and an additional one cent per hundred in Toronto to cover rebilling, will freight the goods to any point in Western Ontario. The New Brunswick shipper gets a freight rate of 23 cents per hundred for the 980 mile haul from Woodstock, N.B. to Chatham, Ontario. The shipper, say up at Orangeville, pays 13 cents per hundred for hauling the same goods 170 or 180 miles to the same point.

Mr. Vance estimates that from 1,000 to 1,200 carloads of Maritime potatoes come into Toronto every year. At present these cars will average $500.00 or $600.00 each. He believed that the bulk of this trade could be kept in Ontario, but farmers would have to discard most of their present varieties, which seem run out and undesirable in many ways, and start with fewer varieties and of a type demanded by the market. That is the potato must be large in size, white in color, thin in the skin, and free from rot and scab. He believed the Delawares could be grown here quite as successfully as in New Brunswick.

Most of these commission people talk about the use of commercial fertilizers on potatoes, and attribute these Eastern peoples success to the use of these manures. Mr. Vance has visited the New Brunswick potato districts at all times of the year and found that growers manured more heavily, cultivated their crop more thoroughly and more frequently than here. They sprayed for both blight and bugs, handled their crop almost entirely by machinery as they experience the same labour difficulties there as here. The great potato district of New Brunswick, lay between Burton and Bath, in a narrow strip about 40 miles long and from 3 to 10 miles wide. At almost any station in this district he could get together any number of cars of potatoes at any season of the year. Farmers there sold by the barrel, a barrel containing about two bags. At present, (March 15) they were selling in New Brunswick at these shipping points for $1.25 per bbl. and in Toronto for $1.15 per bag. The lowest price paid growers there in the past five years has been 65 cents per barrel.

Mr. Vance emphasized the point that potatoes should be sold according to variety instead of any old way as at present. It would be impossible, he pointed out,to mix all varieties of apples together and get for them a price equal to that gotten for fruit that was separated out one variety from another. The same was true of potatoes, and the different varieties of potatoes differed in character and quality quite as widely as the different varieties

of apples. Different varieties differed from each other in the length of time to cook, in mealiness, in colour and in taste and where a number of kinds were mixed as satisfactory results could not be obtain d as where one variety alone was used.

White & Co., McWilliams & Everist, Cleghorn, Barret, Bailey, Bamford, Thompstone, Robt. Hay Co., and other dealers were spoken to on this subject, and expressed opinions similar to those given above in Mr. Ryan's and Mr. Vance's remarks.

It might be interesting here and in this connection to quote prices paid for Ontario and New Brunswick stock in Toronto market during the past year or two. The figures are taken from *The Weekly Sun* and from *The Farming World*:

Date	Ont.	N. B.
Jan. 2, 1905	60 cents	70 cents
" 15, "	70 "	80 "
Feb. 1, "	70 "	80 "
" 15, "	70 "	80 "
Mar. 1, "	70 "	80 "
" 15, "	70 "	80 "
April 1, "	70 "	80 "
" 15, "	60 "	60 "
May 1, "	60 "	70 "
" 15, "	60 "	70 "
June 1, "	50 "	60 "
" 15, "	50 "	60 "
July 1, "	50 "	65 "
" 15, "	$1.25 "	
Aug. 1, "	1.25 "	
" 15, "	1.20 "	
Sept. 1, "	90 "	
" 15, "	75 "	
Oct. 1, "	65 "	
" 15, "	75 "	
Nov. 1, "	70 "	80 "
" 15, "	70 "	90 "
Dec. 1, "	65 "	80 "
" 15, "	65 "	80 "
Jan. 1, 1906	65 "	80 "
" 15, "	70 "	80 "
Feb. 1, "	70 "	80 "
" 15, "	70 "	80 "
Mar. 1, "	70 "	80 "
Mar. 15, 1906	70 cents	80 cents
April 1, "	70 "	80 "
" 15, "	80 "	90 "
May 1, "	90 "	$1.00 "
" 15, "	95 "	1.10 "
June 1, "	85 "	1.00 "
" 15, "	80 "	1.00 "
July 1, "	$1.05 "	1.15 "
Sept. 15, "	90 "	
Oct. 1, "	65 "	
" 15, "	65 "	
Nov. 7, "	60 "	70 "
" 20, "	75 "	85 "
Dec. 1, "	70 "	80 "
" 15, "	70 "	75 "
Jan. 1, 1907	60 "	70 "
" 15, "	70 "	80 "
Feb. 1, "	70 "	80 "
" 15, "	70 "	80 "
Mar. 1, "	75 "	85 "
" 15, "	85 "	$1.00 "
April 1, "	85 "	1.10 "
" 15, "	90 "	1.10 "
May 1, "	$1.00 "	1.15 "
" 15, "	1.00 "	1.20 "
June 1, "	1.10 "	1.20 "
" 15, "	1.15 "	1.35 "

Average difference in favor of N.B. goods since Jan. 1st, 1905—12 cents per bag.

Hamilton.

Quantity required. From 300 to 400 bags per day.

Quality desired. Hamilton requires practically the same quality of potato as Toronto, but consumers do not discriminate as closely. Large sized, white potatoes, shallow in the eye and sound are in brisk demand at any time here, but any kind of potato is saleable at some price.

Source of supply. Practically all the potatoes used are grown locally or purchased in car lots in Ontario. Not more than 25 cars of Delewares came into this market last year, but Eastern importations are increasing yearly. Ancaster and Barton townships and the districts around Millgrove and Waterdown are the chief producing districts. Farmers around here grow altogether too many varieties. Hamilton is only just beginning to use these Eastern potatoes. She has always been fairly well supplied by the local product, but if the local crop should fail any year to any extent and these New Brunswick Delewares get the market the local stuff is going to be driven out just as it was driven from Toronto.

London.

London is estimated to consume about 400 bags per day. Most of the supply is grown locally, the early potatoes by market gardeners adjacent to the city, the winter and fall supply by the farmers of Caradoc, Delaware and London townships. Few potatoes are shipped in from points outside Middlesex county. A few cars of New Brunswicks have been received but did not prove entirely satisfactory. London, it might be said, has the farmers market habit and has it badly, hence consumers buy the great bulk of their supply from the producers' waggons. The Carman is the favorite late variety and all kinds are sold under this name. Dooley is another variety that is largely grown, while Irish Cobbler is a favorite among the earlies. Dealers here complain because there is no legal weight for a bag of potatoes. Any weight per bag may be sold on the market, and many bags do not contain more than 70 pounds.

Stratford.

This is not a potato country. Enough is produced locally for the city trade or if sufficient is not grown, a few cars are brought in from Dublin, Strathroy, St. Marys or Orangeville. New Brunswicks are unknown here. Of all the towns and districts in this vicinity and north of here the same may be said. Exeter, Goderich, Clinton, Seaforth, Wingham, Palmerston, Harriston, and all points south of Hepworth produce sufficient for home consumption, but seldom do their towns require to bring anything in.

Port Hope, Cobourg, Belleville, Kingston, Peterborough, Lindsay and all points and districts in Eastern Ontario excepting Ottawa and surrounding territory.

Generally speaking, in all these towns and cities sufficient is grown locally to supply local markets, or if importations are required it is generally Ontario stuff that is brought in. A few cars have been shipped out of Cobourg. Last year about 20 cars in all were exported from here. Belleville, Kingston, Peterboro and Lindsay neither bring in stuff or export any. Consumption and production balance fairly well.

Toronto is not by any means the only market of any importance in the province where Ontario grown stock is discriminated against in price, and where Maritime potatoes are favored. All over Ontario these Eastern goods take the market better than our own, but as yet Toronto is the only city that is getting really first class New Brunswick stuff. The people in the smaller cities hav'nt really had a chance to sample the genuine article yet. New Brunswick potatoes do not all come into the market, true to variety, clean, graded and so on, but the bulk of them do. Now most Toronto potato dealers have an outside trade with country towns and smaller cities. In fact anybody west of Toronto, requiring a load of potatoes, orders it through dealers in this city. They fill such orders with such off quality or mixed stock as is available. Hence it is that everybody in Toronto speaks highly of the Delewares, simply because they're getting the cream of all the stock imported into the province. But when you get out to such places as Petrolea, Sarnia, Chatham or Windsor and examine the goods which dealers there have bought for Delewares, and find that these so called Delewares consist of half a dozen different varieties and don't look half as well as what they were calling New Brunswicks back in Toronto, you'll under tand why it is that

outside the Queen City, people do not notice as much difference between the New Brunswicks and Ontario's as they do in Toronto.

But there is a difference, and even these mixed lots reaching the outlying districts, show more quality and are worth more to the consumer than those from Ontario growers. Just at present the average of Ontario potatoes is very much inferior to the average from New Brunswick. They're inferior in almost every thing that goes to make a potato desirable, small, scabby, rotten and lack table quality. Potatoes, by many growers are being produced in Ontario to-day, that are the equal of anything that ever came out of New Brunswick or any place else. But this is the great trouble with the potato business: we don't know how to market our crop after we have it produced. This is the point on which the majority of our growers fail. Farmers do not grade their stock when shipping, and do not seek to improve the quality of the output. They seem to believe that what they're stuffing into the car in the name of potatoes is going out of their district anyway and won't be heard of any more. After a time, that is after a buyer has got caught with such a lot two or three times, he goes elsewhere for his goods, and then the farmers begin to tell you that they can't grow potatoes anymore, that the big markets won't bid on their stuff, that the Eastern potatoes have driven them out; and is it any wonder? Open almost any car of New Brunswick potatoes standing in Toronto yards, remove one of the partition boards that divides the car into two compartments and leaves the little space in the center for the stove and fuel, and the tubers roll out as clean, as even in size as Californian oranges. Examine a load of Ontario's just beside it and you'll find samples of every variety in the province, and tubers of every size, shape, colour, and rot and scab will be in evidence.

Of course all blame for such conditions as these do not rest on the farmer. The shipper is also at fault. One thing about potato shippers is that they're too anxious to do business. Competition has been keener these last few years for potatoes than for any other farm product. To do business dealers take anything and everything offered, knowing that if they attempt to cull or grade the stock farmers would promptly give their trade to some competitor. There is a noticeable lack of co-operation between grower and shipper.

Potato Culture.

For the purpose of acquainting ourselves with those methods of potato growing that seem to yield the best results we made a review of much of the literature published in recent years on potato growing. The United States Experiment Stations, have apparently done more in the matter of experimentation in potato growing than has been done by all the rest of the world combined. In most cases the origin of information and quotations will be given.

Potato soils and their preparation for planting: "An ideal soil for potatoes should be one so light as to offer no great resistance to the enlargement of the tubers, so suplied with organic matter as to be rather moist without being wet, and so rich as to furnish an unfailing supply of fertilizing ingredients," says a well known American Experimentalist; and his definition, stripped of its verbosity, simply means that an ideal potato soil is a fertile, sandy loam.

Opinions differ as to what is the best position for potatoes to occupy in the rotation. T. B. Terry, the well known agriculturist and writer, followed for years the practice of a three year rotation of clover, potatoes, and wheat.

Most experiments in this line go to show that clover sod makes about as good a potato soil as any. Early and deep fall plowing of such land, where possible, is advised, and cultivation during the fall will aid in bringing about the decomposition of the sod. If we remember that the potato thrives best in a deep, well drained, moist, mellow cool soil, and give our seed bed such preparation as will best, bring this desired condition about, no matter after what manner the work is accomplished, such a soil will be in the best possible condition for potato growing.

Manures for Potatoes, Commercial Fertilizers: When and how to apply manure to a potato soil has been the subject of a vast amount of experimental work and such work has resulted in many contradictory opinions being held on the subject. Best experience however, seems to show that where soil preparation similiar to that we have outlined is followed, it is best to apply the farm manure, well rotted is possible, before plowing in the spring. Plow it down three or four inches with a gang plow, and by further cultivation incorporate it, as thoroughly as possible, with the upper six inches of soil. Fresh cow manure is looked upon generally by growers, as being rather dangerous to use because of its tendency to assist in the development of scab. The manure itself may or may not contain that which produces this scabby condition, but its presence in the soil seems in some way to aid in the development of the fungus.

Commercial fertilizers in potato growing can hardly be said to be coming into use as a general rule, though more and more are being sold for this purpose every year. There are a good many acres in the province that are not nowadays, producing anything like the yields that were formerly derived from them. Now this decrease in productiveness may or may not be caused by any deficiency in the essential fertilizing ingredients. It may be due to other causes, quite aside from this, causes which we have elsewhere pointed out. At the same time it should be remembered that the natural tendency in every potato soil is to become depleted of its potash. Potatoes are grown invariably on sandy loam. Such soil even in its state of virgin fertility does not contain anything like such percentages of potash as the clays, and when devoted to potato growing for any length of time tends to become less and less productive. Hence in most potato producing countries the use of potash, and phosphates two, in some commercial form becomes a necessity. Mr. Alva Agee of the Pennsylvania State Board of Agriculture, Harrisburg, Pa., in Bulletin No. 105 of that station discusses this phase of potato growing pretty fully.

The use of commercial plant food in large or small quantities is attended with some financial risk unless all conditions of soil and season are favorable. And even when such favorable conditions prevail, the larger crop secured from the use of these kinds of manures, is not necessarily the most profitable. A grower may imagine that his soil because it is less productive than formerly is deficient in potash, and after investing heavily in fertilizers rich in this ingredient find that he is making no more profit than before. It is a trite statement, but a true one, that each farmer must discover for himslf by experiment the fertilizing needs of his farm.

Seed Selection, Treatment for Scab, Cutting the Sets.

Authorities differ as widely as it is possible to differ, as to the relative value of large, medium and small seed for planting. Prof. Zavitz, of our own institution, stated, some years ago in summing up the results of his experiments on this point, that he obtained largest and most profitable

yields, year by year, from the use of medium sized seed. American work on the same subject, seems in the majority of cases to bear out results obtained at Guelph. Seed selection is the one phase of potato growing which in altogether too many instances is neglected by the grower entirely. Farmers generally practice a system of seed selection that is positively worse than no system at all. A common method is to plant the small, unsaleable tubers, and it is generally men who follow such methods as these that complain the most about varieties running out, and are under the necessity oftenest of changing seed with their neighbors. Now the planting of small potatoes is not without some merit, and the practice has some foundation in sense. Small potatoes, for example, used for seed, in a dry soil and in a season of continued dry weather will not dry up as rapidly as cuttings from larger tubers, and are likely, in circumstances such as these, to produce a more even stand of vines and a better crop. But planting the small seed should not be practised to any extent even in circumstances such as these.

We hear a great deal in these days about varieties running out. In fact this characteristic has been always regarded as inherent in all varieties. In this connection it might be interesting and not altogether out of place, to consider why it is varieties do run out, and by what system of selection can we not only maintain the strength, vigor and productive qualities of any variety, but at the same time improve that variety in those qualities and characters which it is desirable should be perpetuated. H. L. Bolley Botanist, of the government Eperimental Station at Fargo, North Dakota, in Bulletin No. 30 of that Station, takes up pretty thoroughly this running out of varieties, and from a carefully conducted series of experiments concludes that present methods of potato seed selection, even the best of them, are far from being as thorough as they should be.

The different varieties of potatoes are produced in different ways. Some arise from seed selection but most from tuber variation. Some individuals among all plants, and varieties or strains of plants, tend to vary from the standard type of their parent. This tendency among all plants wild or domesticated is altogether too common to require any explanation as to why it should obtain. No two potatoes in any hill or field are identically the same. Both may be the product of the same seed, but they differ from the stock from which they sprung just as they differ one from the other. The natural tendency to run out or degenerate, is simply a wide range of variation from standard type, and in proportion to the extent to which the strain differs from the standard type, in that proportion has it degenerated. It is simply a variation of the crop into certain strains. as for example of smallness, of many tubers to a hill or peculiarities of form that tend to persist from year to year.

"The potato tuber, it is well to remember, does not belong to the root system of the plant, but to the stem. It is not a true seed: that is in the seed ball. It is simply an underground enlargement of the stem consisting of a mass of nutrient materials intended to nourish the buds or eyes when they are ready to commence growth. The tubers, therefore, tend to partake of the nature and characteristics of the plant that produced them. If the plant has been a strong and vigorous one, producing a goodly numbers of strong, well formed tubers, each of these tubers will partake of the characteristics of the parent, and under favorable conditions will produce similiar strong plants, while if the plant is weak, setting only a few small tubers and growing them to only medium size, these tubers also will inherit and transmit the characters of the parent plant. A small sized tuber if taken from a hill of large potatoes, though it may be undersized itself, because

it was started late, and did not have time to develop, will possess and transmit the characters of its worthy parent. So also would a fair sized tuber from a weak hill inherit the tendencies of and if used for seed tend to transmit the characters of its parents."

Hence the inspection of the individual tuber alone will not enable us to judge whether or not it inherits vigor and productiveness. Selecting the large or medium sized tubers in the bin, will not with any desired certainty make the crop a better one; for many hills that have produced a great number of tubers off in form or small in size may furnish a large number of the tubers used as seed, for the next crop. Generally speaking since the inherited tendency of the potato is to reproduce not its own individual characteristics but rather the peculiarities of the plant or strain from which it comes, it is very evident that a small tuber from a vine that has borne tubers chiefly of the desired form and size, is of more worth for seed purposes than a very large tuber from a vine that has descended from a strain of vines, that habitually bore numerous, small, undersirable tubers. But because of this growers would be wrong in concluding that small, inferior tubers are as likely to produce as good a crop as large ones. Some times growers for the sake of economy select "seconds" for seed, and sometimes too they are as productive as large ones. But it is well to remember that the good hills produce relatively few seconds, while the poorer hills produce but little else. In every field and in every variety there are always found some weak inferior hills, and in the absence of any system for excluding the product of these from next season's planting, their proportion to the whole is bound to increase, season by season, with a gradual decline in the productivity of the general stock. Ultimately the variety will be said to be "run out."

Seed should be selected at digging time and should be taken from those hills which made the most vigorous growth and produced tubers of standard variety type. The exact manner in which this should be carried out is of minor importance. It is most important to select seed from a plant that has produced a strong vigorous vine and a large number of large sized, well shaped tubers.

Changing the seed to improve the strain in productiveness and vigor has little to commend it. In fact the wisdom of such procedure is neither borne out by experimental results nor based on common sense. W. J. Green in Ohio Bulletin No. 76, 1897, says authoritatively; "We do not find anything in the practice of changing seed, for the mere purpose of securing that which has grown on a dissimilar soil, or in different climate, to commend. It is well enough to change seed, if that can be found which is more carefully selected than your own, or for the purpose of securing an improved variety; but to change from one soil to another may or may not be advantageous."

Treatment of Scabby Seed. Potatoes whether they are treated for scab or not should never be planted in a soil that has produced scabby tubers the year before. In fact the scab fungus may persist in the soil for several years and affect potato crops grown on it. To kill the scab spores on affected tubers, soak them, before cutting, for one and a half or two hours, in a solution of one pint of formalin in 25 gallons of water. This treatment is just as effective as the corrosive sublimate, is more convenient and less dangerous. It costs about 10 cents per acre to so treat potatoes for scab.

Cutting the Seed. So much experimental work has been done in the matter of testing the value for seed purposes of sets cut from the seed end, the stem end or the middle of the potato, and the results of these experiments are, in many cases so contradictory that it is worse than useless for us to review any part of these voluminous discussions here. A good many

growers in Ontario practice the discarding of the seed end of the tuber. Spear, of Iowa, sums up one side of the case pretty clearly when he says, "Although I have conducted hundreds of potato experiments, I have never noticed anything that would indicate that one end of a pototo is better for seed than the other, but potatoes are so often injured by drought, weeds and other unfavorable conditions that it is generally unsafe to plant the seed end." On the other hand, L. R. Taft, of Michigan, whose experience in potato growing is quite as wide as Green's, and whose experiments in hese matters are quite as extensive, states with a positiveness quite as conclusive that "the seed end is as valuable for planting as any other portion of the tuber."

This point is not worth further discussion. Generally speaking best results are obtained in potato growing from using large sized tubers for seed, by cutting the sets to a good size with one or two eyes each, by planting these sets 16 inches apart in rows that are 36 inches apart, by covering four or five inches deep and in subsequent cultivation by either hilling up the rows slightly or keeping on the level.

Diseases of the Potato.

Phytophora infestaus, The Downey Mildew or Late Blight. Blight to the ordinary observer makes its first appearance when the vines show a sudden or gradual death about the end of July. But the disease though it was unobserved must have begun at a much earlier date. Until quite recently the theory was generally accepted that the fungus persisted over winter in infected tubers, that these when planted produced in the vines that sprung from them the disease, and that the condition could not very well be induced in any other way. It is a well known fact that it is on infected tubers that the disease first makes its appearance. In spring when these tubers are planted, the mycelium of the fungus pushes out from the diseased on to the healthy tissue, and there forms the temporary spore or reproductive stage, quite similar to that which it later develops on the leaf in July or August, as this stage of the development occurred within a few days after planting and as the disease seldom appeared till two or three months later the problem was to account for the condition of the fungus during that time and the manner in which it induced infection at the later date. To account for this, botanists advanced the theory that the fungus grew directly from the infected tuber planted, into the healthy leaf stalk and secured infection in this way. How all this development could occur, how the fungus could grow all the way up the leaf stem, and leaves, without causing injury or giving evidence of its presence until it is produced, always upon the isolated leaflets, the characteristic black spots of the disease was inexplainable.

Clinton, of the Conn. New Haven Experiment Station, who has probably done more investigation work in connection with Phytophra than any other botanist in America, has advanced the latest and certainly some of the soundest of recent theory in connection with this disease. He believes that infection to the vines comes by contact of the leaves with the ground at the critical wet periods in July and August when the germs of the blight are probably first available in the soil for infection, and that this is not only the usual, but the only method of primary infection.

In support of this statement, Clinton quotes a number of observations and experiments tending to show that the first appearance of Phytophora is on leaflets in contact with the soil. Also that when potatoes are planted in a field that last season suffered from blight, the crop will be affected

earlier and with more serious attack of the disease. That is to say, the old half rotten tubers left in the soil from a previously diseased crop, will, when they are brought into conditions favorable to growth, develop myriads of mycelium and the leaves of the crop coming in contact with this growth in the soil, some of the spores of the disease will gain entrance to the leaflets. Once established within the leaf the mycelium is pushed in among the cells which it breaks down and causes to be brought about that parched up, yellow evil smelling, condition commonly called blight. From this mycelium within the leaf, out through the stomata on the under surface, hyphae, each bearing a number of spores, are borne, and these spores, borne about by various means, are carried to the leaves of healthy plants where they germinate, gain entrance and reproduce the disease. This is called the secondary infection, and is the form in which the disease makes its withering ravages in the potato fields. The spores from these hyphae are carried to the healthy plants in three ways, by rain, by insects and by wind.

1. *Rain*: Moist, "muggy" weather is absolutely essential to the development and spread of blight in the field. Especially is this necessary since the fruiting bodies of the fungus, the spores, are swimming or zoo spores. Moist weather is necessary for infection and warm weather checks its spread, even checks the growth of the mycelium within the leaf. It is believed that the disease cannot develop at all when a temperature higher than 78 degrees F. is reached.

Rain is favorable to the germination of the spores, it serves as an agent of infection by distributing the spores and washing them down into the soil to the tubers. It does not do much in the way of conveying the disease from one plant to another, but it helps to spread it over a plant in which it is already established, and it carries the spores down to the tubers where they readily develop. Produce the well known rotten condition, and perpetuate the fungus over winter.

2. *Wind*: Phytophora is not well adapted to have its pores distributed by wind, though wind may act to some extent as a carrying agent of the spores from one plant to another in the same or in adjacent fields.

3. *Insects*: Insects seem the common agents for distributing Phytophora spores throughout the fields as they are also the chief means of conveying them from one field to another. In other words, were it not for insects, the selection of an isolated field that had not grown potatoes for a number of years, and the use of seed free from rot should give a crop free from blight. From quite a number of experiments concluded at New Haven, Clinton, concludes that insects are among the most active agents in the distribution of blight spores and were it not for them growers could depend upon the isolation of a field as a surety that the crop will not be affected with disease, but that in more isolated fields there is less danger of infection. The common potato bug or Colorada beetle and the flea beetle are among the common insect conveyors of this disease. The potato beetle is especially well adapted for spore conveyance, since the under side of the tarsi of its legs are provided with a stiff brush of hair. Insects too by puncturing the leaves give ready entrance to the developing spore tubes after the disease spores have been deposited on the leaf.

Altogether too little authentic information in reference to potato blight is available. It is not that sufficient literature has not been produced on the subject, but because of the wide difference in the results obtained by different experimenters, and the wide diversity of opinion held by botanists, that it is difficult to give anything that could be regarded as the real status of knowledge in reference to potato blight at the present time. In the above

paragraphs we have quoted largely from the work of Clinton of New Haven Station, Connecticut. U.S.A., whose work on this fungus has been very complete and whose theories in respect to the life history of the organism, its perpetuation one season to another, and the manner in which it affects infection are the soundest and backed by the widest field of observation and experiment of any we have read. A full account of Clinton's work on Phytophora may be found in the Report of the Station for 1905, page 304, and in the Report of 1904, page 363.

Eight ways of Preventing or lessening the Severity of Potato Blight: 1. Spraying with Bordeaux mixture, not simply sprinkling but covering the whole plant with an armour of the mixture, with a thin film of the copper to either prevent altogether the entrance of the spore tubes or so injure their vitality as to render them less able to reproduce the fungus.

2. Obtaining disease resisting varieties. Varieties differ much in their susceptibility to the disease, and those least subject should always be planted.

3. Planting on fresh ground and planting early.

4. Good cultivation and a good rotation.

5. Destroying all refuse of the potatoes.

6. Having good drainage both water and air drainage, near woodlands where air drainage is poor, the disease spreads rapidly in damp, misty weather.

7. Not digging until ten days after the vines die, when a crop has been affected with blight, will lessen the rot among the tubers.

8. Getting the potatoes out of the field as soon as possible after digging and never covering the potato piles with the spore laden vines.

Early Blight, (Macrosporium solani). This disease occurs early in the season in June or July and occurs especially in dry warm weather and in dry situations. It generally attacks the weakest plants first and produces circular brown spots on the leaf. In severe cases where the leaves or large areas of them are killed early in the season, the tubers are naturally small but always sound. Macrosporium does not attack the tubers directly and never causes them to rot. It is a much less serious disease than Phytophora. and except for its general appearance and microscopic characteristics but little is known concerning it, its life history or the manner in which it perpetuates season to season. The folowing are preventives of Macrosporium solani.

1. Bordeaux mixture.

2. Selection of vigorous varieties, good tillage and fertilization.

Scab (Oospora scabies).

Authorities differ as to whether or not the primary cause of this disease is a fungus. Some maintain that the primary cause of infection of the tub rs is bacterial, and that Oospora scabies and other organisms follow. A great amount of experimental work has been done on this disease, but no preventive is known if the land is inoculated with the trouble. The best treatment for the seed is to soak in a solution of one pint formalin in twenty-five gallons of water for two hours, or in a solution of corrosive sublimate mixed in proportions of one ounce of the sublimate to eight gallons of water. Either of these treatments is effective; the formalin, though, is most convenient, safest, and cheapest.

Scab fungus can live in the soil at least six years without a known host. Beets, mangolds, and turnips are supposed, also, to be subject to this disease,

but on this point there is lots of room for doubt. It might, however, be safest to keep these out of the rotation.

It is useless to treat scabby seed if it is to be planted on scab-infested ground.

Spraying for Early and Late Blight. Bordeaux mixture is the standard preventive for these diseases. Spraying with Bordeaux is simply insuring the crop against attack, and the cost is only the premium paid for the surety. Success in using this mixture depends to a large extent upon the care used in mixing the ingredients and to the thoroughness with which it is applied to the vines. If we remember that the ideal way of rendering a plant immune would be to plunge it into a pail of the mixture, so that both surfaces of the leaf and as much of the stem as possible become covered with a spore-proof armor of copper, and try as nearly as possible to duplicate this ideal in spraying, there is small chance of our crop being seriously affected with either late or early blight. Half spraying, however, is little better than none at all. Plants thus treated are not secure, as the disease can spread within the leaf. Bordeaux mixture is not a "cure" for any plant disease. It is only a preventive. Hence spraying after the disease gains a foothold will likely give poor results.

Preparation of Bordeaux. In using Bordeaux it is generally advisable to have stock solutions of the copper sulphate and lime prepared beforehand. The copper requires some time to dissolve, the lime needs to be slaked, and as it is inconvenient to weigh these compounds in this condition, stock solutions of known strength are prepared, and when mixing these finally for use the proportions are got by measuring.

To prepare enough material to spray one acre of potatoes *four times during the season, proceed as follows: Take thirty-six pounds of copper sulphate (bluestone) and suspend it in a bag or basket near the surface in eighteen gallons of water in a barrel. It is necessary always to suspend the bluestone thus in making a solution. The specific gravity of its solution is greater than that of water. Hence if the copper be thrown in the bottom of the barrel a saturated solution quickly forms around it, which retards or checks dissolution completely. If suspended it becomes soluble in a few hours, and every gallon afterwards dipped from this barrel will contain exactly two pounds of copper. It seems unnecessary to add that the contents of this barrel should always be thoroughly stirred up before anything is dipped from it.

For the lime stock mixture take thirty pounds of fresh quicklime and fifteen gallons of water. Slake the lime by using just as little of the water as possible, and when all is broken down add what remains of the fifteen gallons. A water-tight wooden box will do to slake the lime in and hold the solution, and, if kept covered with water, the solution will retain its strength indefinitely. Every gallon of this solution will now contain exactly two pounds of lime.

In making the Bordeaux those strong stock solutions must never be brought together. Pour three gallons of the copper sulphate solution into a fifty-gallon barrel (an ordinary barrel holds just about fifty gallons); fill this barrel half or three-quarters full of water, add two gallons of the lime solution, fill the barrel up with water, stir thoroughly, and the mixture is ready to use.

*It is very rarely necessary to spray oftener than four times during the season. In giving the quantity required for an acre we have allowed for 75 gallons to be applied at each spraying per acre. In actual practice this quantity will rarely be exceeded and in most cases but 50 or 60 gallons will be required. *But be sure to spray thoroughly.*

The four pounds of lime is more than sufficient to neutralize the acid in this weight of bluestone and render it harmless to the leaf. But in case the lime was not very fresh, or had become air-slaked, four pounds might not be enough. A convenient test to determine whether or not the copper has all been neutralized is to add to a little of the mixture a drop or two of a solution of potassium ferrocyanide (yellow prussiate of potash). If this ferrocyanide solution turns brown when it strikes the Bordeaux, more lime should be added. If no change in color occurs when the drop touches the mixture the acid has all been rendered inactive. Paris green, at the rate of half a pound to every fifty gallons of Bordeaux, may be safely added and sprayed on the vines at the same time, as an insecticide.

The time to commence spraying for late blight is about the middle of July, and the object is to keep the vines completely covered with the fungicide from them until all danger of infection from blight spores is past, say, September. A good spray pump is the most effective means of applying the mixture. It is economical of labor, costs only about twenty-five dollars, and will pay for itself in one year if only used on one acre. The special potato sprayers are arranged to spray the vines from below as well as above, and in this way get the mixture on to both surfaces of the leaf. A good many farmers use no special spraying appliances at all, and seem to get satisfactory results from applying the Bordeaux by whatever means are at hand—by sprinkling cans, etc.

Profits from Spraying.

On the average, all over Ontario, we believe that the growers who are using Bordeaux are obtaining yields per acre from half to as much again as are obtained from unsprayed crops. We have, however, nothing definite to substantiate this opinion, and will quote here the results of a few experiments covering the point conducted at Geneva, N.Y., during the past two or three years.

No. of sprayings.	1902		1903.		1904.		Average gain.
	Acre yield.	Gain.	Acre yield.	Gain.	Acre yield.	Gain.	
	bu.		bu.		bu.		
None	219	.....	174	.....	153½	.....	.....
3	317½	98½	262	88	344½	191	126
5–7	342½	123½	292	118	386½	233	158

Owing to the distinct advance in the price of bluestone, and also to the variation in prices in different localities throughout Ontario, an attempt has been made to strike a uniform average in the cost of this commodity to the farmer by writing) the different districts of the Province and ascertaining the cost at each one of these places.

The potato grower, in making use of this report in figuring the cost of spraying with the Bordeau mixture, should keep this fact in mind, and use our estimates of cost simply as a guide by which to make estimates for his own particular case, substituting the price at which he can buy bluestone for the price which we have used in our estimates, and substituting the price at which he can buy lime for the price used in our estimate, and substituting the cost to him, for the labor of mixing and spraying, for that figure at which it is placed in our estimates.

The cost to spray one acre four times is estimated as follows:

Thirty-six pounds bluestone, at 10c	$3 60
Thirty pounds lime, at 1c	30
Labor of mixing spraying four applications per acre	1 50
Cost per acre	$5 40

The actual cash gain from such spraying at Geneva for the three years averaged seventy-six dollars per acre per year.

Cultivation of Potatoes. After the potatoes are well started, the soil should be cultivated frequently, but shallow, not merely to avoid breaking the roots, but to make a dust mulch in order to retain moisture. One of the best contrivances with which to secure a dust mulch in potato cultivation is to bolt a strong stick across the two hind teeth of the cultivator, first, of course, removing the points. The front teeth are allowed to stir the soil to a depth of one or two inches, and the stick behind smoothes it down, leaving the soil in a much better condition to retain moisture than if thrown up in ridges. This device cannot, of course, be employed very well in the early cultivation of the crop, but if later in the season this tool is used once or twice a week it will aid greatly in conserving the moisture and assist some in aiding the crop to withstand the blight. Since the stick, bolted firmly to the teeth, prevents the widening and narrowing of the scuffler automatically, this device can only be used to advantage where the rows are an even distance apart.

The principal function of cultivation in potato growing is to conserve moisture. Harrowing before the plants are above ground will be found effective. Some growers talk about using the harrow after the plants are up, just as corn is ordinarily harrowed, but we doubt if such practice is ever followed. A weeder is the best implement for first cultivation. After that the scuffler or two-horse cultivator is used. Cultivation should extend right up to the rows. Too many farmers leave a strip of uncultivated soil ten inches or a foot wide, right along the row. If the tubers have been deeply planted—that is, four or five inches deep—there is little likelihood of injuring the plants by close cultivation.

Harvesting and Storing. A good digger is required where any considerable acreage is grown. Those of the style that dig one row at a time, elevate the soil and potatoes, and by a shaking motion separate the tubers from the earth and tops, give the best general satisfaction. Of these the Hoover is most generally used here in Ontario, and in most cases is well spoken of. Of course, where potatoes are planted deeply and the machine is required to get down beneath the hills and elevate the whole mass, the draft is quite heavy; in fact, four horses are usually required on these machines. The potatoes and soil are carried over a slatted steel platform, which is in motion. This separates the soil from the potatoes, allows it to drop back through the openings, and delivers the tubers separate from the tops, in a row, convenient for picking.

Some care should be taken of potatoes intended for seed, in respect to their storing and subsequent handling. Sprouting and the frequent breaking off of sprouts tends to lessen the vitality of the seed, and consequently the yield per acre. Cellars are not a good place for storing seed potatoes. Pits give much better results. If kept in cellars, shovelling over frequently will check sprouting to some extent, but it is rather laborious.

In the great potato producing districts of Maine, where climatic conditions quite similar to our own have to be contended with, wooden houses, double boarded, with a six-inch dead air space between, are used for this purpose. These houses are built over a cellar, in which a stove is kept going in the coldest weather. Potatoes are stored in bins of several hundred barrels each, and as the walls of these bins do not connect with the inside walls of the house, the air from the cellar below circulates freely, and the temperature, even in the coldest weather, does not get much below 35 or 40 degrees Fahrenheit.

Notes on Varieties.

General characteristics of a few of our common varieties only will be given. It seemed almost certain in a good many instances that came under our notice that seed men or potato growers, or somebody, have been giving new names to old varieties. There is, of course, no positive evidence to warrant anything being said. Evidence of this kind would be very hard to obtain.

American Wonder. This is a vigorous, prolific variety; tubers are of good shape and color. It possesses good table qualities, and is a good variety for home or market use.

Borce. Color white, with pink markings. A very productive variety. Has a tendency to go "prongy" and set too many tubers.

Carman, Nos. 1-3. These are both mid-season white varieties of great merit, are unlike in habit of growth, but the tubers bear a close resemblance. Market qualities good; productive and high in percentage of marketable tubers. Are better for market than home use.

Great Divide. A medium-sized, elongated, white potato. Eyes are numerous, but are shallow and not particularly objectionable.

Irish Daisy. Tubers considerably elongated, and eyes deep set, making it objectionable. The skin is white. Not much grown in Ontario, though some report it a good yielder.

Early Sunrise. A medium-sized, long, white potato. A good cropper, and well adapted to clay loams.

Boston Market. A long-shaped, red-skinned potato, shallow eyed. Not a very good producer, and not possessed of No. 1 table qualities.

Russet. A variety lately originated. Has a russet-colored scurf or skin, which scrapes off easily when the tubers are soaked in water. Is medium sized, with fairly shallow eyes; is a good cropper and a good cooker.

Rose of Erin. This is an extra large, long-shaped, white potato, smooth and free from protuberances. Grows exceptionally large and with few small tubers. It is a little too deep in the eye; is a good sand potato.

White Giant. Is believed by some to have originated from Carman No. 3 by selecting the longest shaped tubers. This variety differs in different localities. It is a good table potato and a good producer.

White Elephant. Large, long and white, medium to deep in the eye, and inclined to run rough. Seed end is red.

Beauty of Hebron. Large, long, and of not quite so clear a white color as the Elephant. This is the most widely grown variety in Ontario.

Early Harvest. An elongated potato; white colored, with a yellowish cast. Is about two weeks later than Early Ohio.

Early Thoroughbred. A medium-sized, early, long potato; pinkish white in color.

World's Fair. A rather "long oval" potato. Its principal characteristic is the rough cast or tinge of the skin. In this respect it closely resembles the Russet. Is a medium potato, fair cropper, and of good table qualities.

Rochester Rose. Long shaped, dull white in color, and fairly shallow-eyed. A good general potato.

Early Ohio. A long-shaped, reddish-pink potato, the best early potato grown in Ontario. A good cropper, very early, and of exceptionally good table qualities.

Burpee's Seedling. A long-shaped, white potato, generally regarded as being fairly free from rot.

Early Puritan. An elongated, white-colored potato; not so early as Ohios, and not so good for home use, but a better market potato.

Early Canada. This is a mid-season potato, long shaped and white, fairly deep in the eye, pretty smooth, and is a good producer.

Delaware. An oval-shaped, white to yellowish potato, well adapted to sandy loams, a good producer, sets few small tubers, and has excellent table qualities.

Empire State. An elongated, white potato, medium to deep in the eye, adapted to general soils, and is a good home user. Is one of the most largely grown varieties in Ontario.

Uncle Sam. Tubers large, rather long and thick, usually nearly the same diameter the entire length, slightly flattened; ends nearly oval. Eyes shallow, and surface very smooth. Quality fair; vigorous, and prolific. In general appearance the tubers are large and very fine. This is a long-keeping kind.

Hints on Improving the Potato Industry.

Suggestions as to how the potato industry in Ontario may be improved:

1. By holding special Farmers' Institute meetings in those districts we have mentioned as being the best potato producers, by getting good practical men either from the locality or from a distance to address these meetings and to try by every means possible to get the local men, the growers, interested and to take part in discussions.

2. By making such subjects as potato growing, spraying for the blight, etc., *important* subjects in the list for Institute speakers. Potatoes have been sidetracked in this connection too long.

3. By actually demonstrating, in as many districts as possible each year, the actual operation of making Bordeaux mixture, spraying it on the potato vines and its value as a preventive of disease.

4. By arranging with the experimental department at Guelph, or through the Experimental Union, to conduct actual field experiments in different parts of the province to find whether or not blight may be controlled by Bordeaux, and if so what is the increase in yield per acre, and what does it cost to use that remedy. Farmers as a class will believe Bordeaux is an effective preventive for blight when its value is demonstrated right beneath their noses on their own or their neighbours' farms, the experiments to cover large areas and to be conducted in various parts of the province. Results therefore would be of more general value.

5. By urging upon the farmers, in such districts as potatoes may be successfully cultivated, the advisability of increasing the acreage they are planting to this crop. By getting individuals and ultimately whole districts to specialize in this one thing. In this way more intelligent interest would be shown in potato growing, fewer varieties would be grown and a better

quality of stuff shipped from that district to the market, this work could best be taken up by the Institute.

Of these five suggestions the third is hardly practicable, but the fourth it seems to us ought to, if properly carried out, lead to some improvement in the potato industry. It would help the business along in the very way it should be helped, it would give much more valuable results than could possibly be obtained from small plots, and these results could be used to good advantage in Institute work carried on during the winter. It is only by eternally keeping at the farmers that they can be moved to adopt new ideas. It was through the Institute lectures more than anything else that the bacon industry of Ontario has been brought to its present prosperous condition, and this department can do just as much for the potato grower. Good practical men who know potato growing in all its details are the only men needed for such work.

General Summary.

The world's potato crop in 1904 aggregated 4,297,062,000 bushels. Europe devotes about 40 per cent. of her potato crop to the manufacture of starch and alcohol.

The Germans, of all peoples, are the greatest potato producers and the largest consumers.

In the United States, Maine in proportion to her area devotes the largest acreage to potatoes. Potato growing all over America is becoming more and more of a special line of farming.

Ontario's potato acreage has been decreasing quite steadily for the past ten years, the decrease being due to such causes as the prevalance of blight, the scarcity of labour, the unfavorable weather for some years back, the growing of too many poor low yielding varieties.

In every district and part of Ontario conditions in respect to the industry are practically the same. Farmers are growing too many varieties, they cannot get sufficient help to handle the crop properly with the result that yields are low, the percentage of rot is high and potatoes do not take the market well. The only apparent remedy is for them to invest their capital more and more largely in labour saving machinery, grow few varieties, select their seed more intelligently, spray with insecticides to control insects, and fungicides to prevent the blight.

Toronto consumes from 2,000 to 3,000 bags of potatoes per day and, roughly speaking, draws 80 per cent. of this supply for 9 months of the year, from New Brunswick. In other Ontario cities the N.B. potatoes are not so generally used, but it is only a question of a few years till they will be consumed just as largely in most western cities as they are now used in Toronto. The marketing of a better class of stuff on the part of the Ontario producer is the only way in which the trade can be retained.

It costs 23 cents per hundred pounds to ship potatoes 980 miles from Woodstock, N.B., to Chatham, Ontario. It costs the Orangeville shipper 13 cents per hundred to have his car lot hauled 170 miles to the same point.

The average market difference between N.B. and Ontario potatoes from Jan. 1st, 1905, to June 15th, 1907, was 12 cents per bag.

New Brunswick potatoes are preferred in all markets because they average larger in size, are clean, free from rot or scab, carloads are of one variety only and the table qualities of that one variety cannot be equalled.

Ontario potatoes are discriminated against because they usually contain a large percentage of small tubers, are liable to be infected with rot or scab, and carlots contain too many varieties.

Sandy loam, well drained and early makes the best potato soil. Clover sod deeply fall plowed is the best soil preparation.

Farm yard manure should be applied to this soil in the spring, in a well rotted condition and thoroughly cultivated in.

Commercial fertilizers are not ordinarily required, but if the land seems improductive some form of commercial manure may be applied after the grower has experimented sufficiently with the different fertilizers to know what the requirements of his soil were.

The best way to select stock for seed is to take the tubers from the strongest, most vigorous plants. Plants that have produced potatoes large in size, numerous, and true to variety type, taking seed from the whole crop is a very haphazard method. It is the great cause of varieties running out.

There is nothing to commend in the practice of changing seed.

Scabby seed should be treated with formalin and never planted in a soil that has produced scabby tubers within the past six years.

It makes no difference whether sets are cut from the seed end, the stem end or the middle of a tuber.

Phytophora infestaus (late blight) and Macrosporium solani (early blight) are the two commonest potato diseases. Both may be controlled by Bordeaux after the formula, 6 lbs. bluestone, 4 lbs. lime in 50 gallons of water. For the late blight commence spraying July 15th, for the early blight about the middle of June. The early blight is rarely very prevalent.

Spraying with Bordeaux costs from five to eight dollars per acre, the actual cash gains from such spraying at Geneva, N.Y., for the past three years averaged $76.00 per acre per year.

Cultivation of potatoes should be frequent and shallow. Its principal purpose is the conservation of moisture. Digging where large acreages are grown can now only be performed by machinery. The Hoover digger is the most satisfactory used in Ontario.

Potatoes intended for seed should be stored in a cool place that the buds may be kept from sprouting, as sprouts that grow out and are broken out decrease the vitality of the tuber.

The potato industry in this province is well worth more attention than it now receives and the Department of Agriculture, through its Farmers' Institute system, directly, and through its Experimental Station should endeavour to do something to bring about improvement.

It is by education alone that the growers can be made to produce a better article than they are producing at the present time, and in proportion to the "closeness" with which we can carry that instruction to the growers in the same proportion will be the success of the undertaking.

THE POTATO CROP OF ONTARIO FOR 1906.

The following table, taken from the Annual Report of the Bureau of Industries, shows by counties, the area, yield and market value of the Potato crop of 1906 in Ontario. It also gives the statistics for the last ten years with the average for the 25 years 1882-1906.

Counties and Districts.	Acres.	Bushels.	Bushels Per acre.	Market value.
				$
Algoma, Thunder Bay and Rainy River..	1,744	254,624	146	136,987
Brant	2,364	290,772	123	156,435
Bruce	3,344	448,096	134	241,076
Carleton	3,662	465,074	127	250,210
Dufferin	2,227	207,111	93	111,426
Dundas	1,974	238,854	121	128,504
Durham	2,498	299,760	120	161,271
Elgin	2,733	333,426	122	179,383
Essex	3,097	300,409	97	161,620
Frontenac	3,760	406,080	108	218,471
Glengarry	2,032	219,456	108	118,067
Grenville	2,682	329,886	123	177,479
Grey	5,105	704,490	138	379,016
Haldimand	1,288	113,344	88	60,979
Haliburton	598	60,996	102	32,816
Halton	1,428	145,656	102	78,363
Hastings	4,657	512,270	110	275,601
Huron	3,446	441,088	128	237,305
Kent	3,149	349,539	111	188,052
Lambton	3,038	297,724	98	160,176
Lanark	2,201	319,145	145	171,700
Leeds	2,901	371,328	128	199,775
Lennox and Addington	3,240	349,920	108	188,257
Lincoln	1,997	171,742	86	92,397
Manitoulin	513	66,177	129	35,603
Middlesex	5,174	600,184	116	322,899
Muskoka	1,089	143,748	132	77,336
Nipissing	1,078	121,814	113	65,536
Norfolk	2,890	280,000	100	150,640
Northumberland	4,153	415,300	100	223,432
Ontario	3,475	337,075	97	181,346
Oxford	2,676	329,148	123	177,082
Parry Sound	1,248	194,688	156	104,742
Peel	2,909	258,901	89	139,289
Perth	2,984	393,888	132	211,912
Peterborough	2,664	301,032	113	161,955
Prescott	2,762	317,630	115	170,885
Prince Edward	1,964	163,012	83	87,700
Renfrew	3,461	467,235	135	251,372
Russell	1,227	184,050	150	99,019
Simcoe	7,146	771,768	108	415,211
Stormont	1,825	235,425	129	126,659
Victoria	2,457	196,560	80	105,749
Waterloo	2,837	295,048	104	158,736
Welland	2,852	245,272	86	131,956
Wellington	4,107	369,630	90	198,861
Wentworth	3,359	309,028	92	166,257
York	6,139	392,896	64	211,378
The Province				
1906	136,064	15,020,299	110	8,080,921
1905	132,530	14,366,049	108	6,608,383
1904	133,819	15,479,122	116	7,847,915
1903	139,011	16,676,447	120	7,354,313
1902	144,733	12,942,502	89	7,312,514
1901	154,155	18,116,637	118	7,717,687
1900	163,754	21,476,439	131	5,605,351
1899	168,148	19,933,366	119	6,538,144
1898	169,946	14,358,625	84	6,332,154
1897	169,333	16,100,797	95	6,424,218
1882-1906 (average of 25 years)	155,406	17,837,505	115	7,338,880

COMPOSITION AND COOKING QUALITIES OF POTATOES.

Report of Experiments Conducted by Prof. R. Harcourt, O.A.C., Guelph, Ont.

To secure data showing what difference, if any, there is in the composition of potatoes grown in Ontario and in the Maritime Provinces, we have collected, analyzed, and determined the cooking quality of eighty-one samples of potatoes, fifty-three of which were grown in this Province, and twenty-eight in the Eastern Provinces.

All the potatoes, with the exception of samples Nos. 78, 79, 80, and 81, were sent to us by persons with whom we corresponded, and who were made familiar with the object of the work. The four above mentioned samples were Maritime Province potatoes secured on the open market. In soliciting samples we asked for the name of the variety and a statement of the nature of the soil in which they were grown. Unfortunately, this information was not always given, but, so far as can be ascertained, the soil was in nearly all cases a sandy or sandy loam. The data received are incorporated in Table No. 1. The same table also contains a record of the cooking quality of these potatoes. In carrying out this test a comparatively small sample of each lot was boiled separately in small saucepans, and the marks for flavor, mealiness, and appearance, which are given in the following table, were allotted by three of the teachers of the Macdonald Institute. In a few cases the original sample was so small that after preparing a sample for analysis there was not enough left for the cooking test. Where no marks were given for appearance, the boiled potatoes were so dark in color or black and hollow in the centre that no marks could be given on this point. This may or may not be characteristic of the variety, but these potatoes were very bad in this respect.

The investigation was undertaken rather late in the season, and, as samples for analysis were prepared first, the cooking tests were not made until the latter part of April. Consequently, they were made at a time more favorable for the late than for the early varieties. An attempt was made to separate the varieties into early, medium, and late, but it was found that no such classification could be made that would be perfectly satisfactory. For some few years past a record has been kept by the Experimental Department of the Ontario Agricultural College of the number of days required to mature different varieties. But as potatoes, like other crops, mature one season faster than in another, it would not be fair to compare the days required to ripen one variety of potatoes one year with a different variety another year. An average of past records cannot be got for all the varieties on this list; because, while some of them are still being grown on the Experimental Plots, others were discarded years ago, and others are just being brought into the comparative test work. Consequently, the figures showing the number of days required to mature those varieties which were grown on the Experimental Plots in the year 1906 only are given. For these figures I am indebted to Prof. Zavitz, who has charge of the field experimental work.

When we remember that the cooking tests were made late in the season, we are not surprised to find that there are very wide differences in the number of marks allotted the various samples for quality. Twelve samples, six grown in Ontario and six in the Maritime Provinces, received over 85 points; but one-fourth of the total number fall below the 50 mark and six below 20. The average total score of the forty-nine Ontario samples cooked is 59.6, and of the twenty-six Eastern samples is 66.7.

TABLE No. 1. TABLE SHOWING SOURCE OF POTATOES EXAMINED AND THEIR COOKING QUALITY.

Varieties	Soil	*No. of days in reaching maturity	Flavor 40 points	Mealiness 40 points	Appearance 20 points	Total 100 points
POTATOES GROWN IN ONTARIO.						
From Experimental Department, O.A.C.						
1. Rose of the North	Loam	95	29	18	†	
2. Carman No. 1	"	103	29	32	16	77
3. Early Andes	"	90	35	37	18	90
4. Holborn Abundance	"	105	35	38	18	91
5. Stray Beauty	"	87	12	16	10	38
6. Snider	"	88	20	16	12	48
7. Robertson's Champion	"	103	10	2	5	17
8. Early Dawn	"	89	28	33	15	76
9. Empire State	"	101	33	33	17	83
10. Dempsey's Seedling	"	101	30	28	12	70
11. Burpee's Early	"	99	15	20	7	42
12. Early Fortune	"	89	29	32	17	78
13. Early Pinkeye	"	87	29	25	17	71
From J. Hewer & Sons, Guelph.						
14. Early Harvest			25	37	15	77
15. Irish Cobbler			13	25	15	53
16. Eureka			22	25	16	63
17. American Wonder			16	18	14	48
From Chittick & Co., Guelph.						
18. Caledon East			35	37	16	88
19. Early Immigrant			18	26	14	58
20. American Beauty			25	34	16	75
From Rennie & Co., Toronto.						
21. Earliest Six Weeks (Grown in York Co.)		90		not	cooked	
22. Early Sunlight (Grown in York Co.)		100		"	"	
23. Gold Coin (Grown in Muskoka)		101		"	"	
24. Irish Cobbler (Grown in Muskoka)			30	26	15	71
25. Queen of Hebron (Grown in Muskoka)			30	38	19	87
From Steele, Briggs Seed Co., Toronto.						
26. Irish Cobbler			22	36	17	75
27. Early Sunlight		100	20	15	12	47
28. Delaware or Green Mountain (N.B. Stock)			7	5	4	16
29. Early Ohio		88	17	25	13	55
30. Favorite Potato (N.B. Stock)			13	15	12	40
From Simmers & Co., Toronto.						
31. New Brunswick Hebron (Ontario stock)			26	39	17	82
32. Early Ohio		88	26	26	10	62
33. Delaware or Green Mountain			10	38	20	68
34. Envoy			29	18	10	57
35. Rose of the North		95	25	18	13	56

* Number of days in reaching maturity at the Experimental Department, Ontario Agricultural College, for the year 1906.

† Scoring of appearance overlooked.

TABLE No. 1.—*Continued.*

Varieties	Soil	*No. of days in reaching maturity	Flavor 40 points	Mealiness 40 points	Appearance 20 points	Total 100 points
From Robert Thompson, St. Catharines.						
36. Naught Six	Sandy loam.	96	39	35	15	89
37. Delaware	Light sand.	.....	29	30	16	75
38. American Wonder	" "	99	25	8	4	37
39. Ohio	Dark sandy loam	.....	15	15	15	45
40. Gold Coin	Dark sandy loam	101	20	15	7	42
41. Gold Coin	Gravelly loam	101	20	20	10	50
42. American Wonder	Dark sandy loam	99	15	25	14	54
43. Green Mountain	Dark sandy loam	.....	15	20	18	53
44. Naught Six	Dark sandy loam	96	14	35	14	63
45. Carman No. 3	Sandy loam.	.....	10	10	7	27
46. Rural New Yorker	" "	101	20	26	14	60
47. Great Northern	Dark sandy loam	.....	25	22	5	52
From Bruce & Co., Hamilton.						
48. Sir Walter Raleigh	.....	97	20	30	9	59
49. Norton Beauty	.....	84	5	5	10	20
50. Bovie	.....	93	12	25	9	46
51. Pride of Aristook	.....	.....	38	39	13	90
52. Gold Coin	.....	101	36	26	19	81
53. Bruce's Early Beauty	.....	.....	5	6	5	16
POTATOES FROM MARITIME PROVINCES.						
From Shediac, N.B.						
54. Surprise	.....	101	8	6	0	14
55. White Queen	.....	.....	33	33	16	82
56. Early Rose	.....	94	26	28	15	69
57. Coppers	.....	.....	.....	not	cooked	
58. Silver Dollars or Jacksons	.....	.....	12	33	16	61
59. Jacksons	Very sandy loam	.....	30	16	14	60
60. Dakota Reds	"	.....	sample	not	cooked	
61. Delaware	"	.....	10	38	20	68
From Sussex, N.B.						
62. No Name	.....	.....	33	34	17	84
63 Green Mountain	.....	.....	33	33	18	84
64. No Name	Sandy	.....	28	34	11	73
65. No Name	.....	.....	5	31	18	54
66. Early Rose	Sandy loam.	94	14	38	12	64
From Truro, N.S.						
67. Bliss Triumph	Medium loam	90	20	30	12	62
68. Elephant	.....	99	39	39	18	96

*Number of days in reaching maturity at the Experimental Department, Ontario Agricultura College, for the year 1906.

TABLE No. 1.—*Continued.*

Varieties	Soil	*No. of days in reaching maturity	Flavor 40 points	Mealiness 40 points	Appearance 20 points	Total 100 points
From Truro, N.S.—Continued.						
69. Early Surprise (Grown in P.E.I.)	" "	.....	34	39	18	91
70. McIntyre's (Predominating variety grown in P.E.I.)	Heavy loam.	.....	19	33	0	52
71. Name Unknown.	Heavy clay loam.	.....	34	39	14	87
72. New Queen (Truro, N.S.)	Sandy loam.	101	35	25	15	75
73. Home Comfort (Truro, N.S.)	" "	.....	38	38	17	93
74. Vick's Perfection	Heavy clay loam.	.....	39	30	17	86
75. Clark's No. 1	Heavy clay loam.	.....	10	3	5	18
76. Burpee's Ex. Early	.....	99	27	16	17	60
77. Early Vermont	.....	.....	30	39	18	87
New Brunswick Potatoes sold in Petrolea, Ont.						
78. Delaware	.....	.....	5	15	10	30
79. Delaware	.....	.....	10	30	20	60
N. B. Potatoes sold in Sarnia.						
80. Early Ohio	.....	.....	8	15	22	45
81. No Name	.....	.....	15	36	28	79

It was thought that possibly the longer maturing or later varieties of potatoes would show the best quality when coked. But, while the highest scores were given varieties which took a comparatively long time to reach maturity, some of these received very low marks. Samples Nos. 2 and 7 illustrate this. Both took 103 days to mature; one was given a total score of 77 marks and the other 17. Both of these varieties were grown on the Experimental Plots, where the conditions of soil, cultivation, and general treatment were alike. On the other hand, none of the varieties which matured in less than ninety days received very high total marks.

COMPOSITION OF POTATOES.

In preparing the potatoes for analysis, they were carefully washed and dried sufficiently to remove all adhering moisture, and then a 500 gram sample was sliced very thin and dried at a low temperature until crisp enough to grind to a fine powder. This sample was then placed in an air-tight bottle and used as occasion required for analysis. Some preliminary work showed that the potatoes contained about .5 per cent, of sugars of all kinds, and that there was very little variation in the amount of these substances. The per cent. of fat was also found to be very small—about .1 per cent., and fairly constant. In view of these facts it was decided to spend very little time on the study of the proportionate amount of these constituents, but to devote the time to the determination of the starch, proteids, and ash, which form the most abundant constituent of the dry matter of the potatoes.

*Number of days in reaching maturity at the Experimental Department, Ontario Agricultural College, for the year 1906.

The proteids were determined by ascertaining the amount of nitrogen and multiplying it by the factor 6.25 to convert to proteids. The ash was got by burning to a white ash in platinum dishes, and the water by estimating the loss in weight during the drying of the sliced potatoes, and finally by drying in a water oven in the presence of a reducing gas. The estimation of starch was made by boiling the dry potato meal in acid and determining the amount of reducing substances by means of Fehling's solution, according to the Association of Official Agricultural Chemists' Methods. It is evident that this method of procedure will not allow of the estimation of pure starch, and that the figures secured really include all reducing carbohydrate bodies present, and, possibly, some other bodies that reduce Fehling's solution. As the substances other than the hydrolized starch that will come into the reaction are comparatively small, it was thought that at least comparable results would be obtained. The undetermined matter includes fat and crude fibre, along with other undetermined substances. All the analyses were carefully made, and where results differing widely from others were obtained the work was repeated, no matter how well the duplicates agreed.

Composition of Potatoes.

GROWN IN ONTARIO.

	In Natural Condition.					Figured to Dry Matter.			
No.	Moisture	Protein	Starch	Ash	Undet. Matter	Protein	Starch	Ash	Undet. Matter
1	79.92	2.02	13.22	.93	3.91	10.06	65.83	4.63	19.48
2	78.91	1.98	14.07	.97	4.07	9.39	66.71	4.60	19.30
3	77.77	2.48	13.95	.94	4.86	11.15	62.75	4.24	21.86
4	77.56	1.76	15.17	1.04	4.47	7.84	67.60	4.63	19.93
5	83 59	2.30	9.57	.93	3.61	14.01	58.31	5 67	22.01
6	82.19	2.57	11.54	.70	3.00	14.43	64.79	3.93	16.85
7	77.53	2.17	14.81	1.13	4.36	9.65	65.91	5.03	19.41
8	81.52	2.32	12.29	.99	2.88	12.56	66.50	5.35	15.59
9	80.12	2.00	13.02	.91	3.95	10.01	65.49	4.58	19.92
10	78.83	2.29	14.05	.91	3.92	10.81	66.37	4.29	18.53
11	79.76	1.96	14.22	.89	3.17	9.68	72.57	4.39	12.36
12	80.09	2.33	13.32	.82	3.44	11.70	66.90	4.12	17.28
13	82 84	2.39	10.38	.94	3.45	13.93	60.05	5.48	20.54
14	77.51	2.49	16.79	.84	2.37	11.08	74.21	3.73	10.98
15	78.50	2.21	16.13	.93	2.23	10 28	75.02	4.32	10.38
16	79.43	2.23	15.04	.91	2.39	10.84	73.11	4.42	11.63
17	79.24	2.24	14.33	.82	3.37	10.79	69.02	3.95	16.24
18	79.67	2.09	14.95	.95	2.34	10.23	73.53	4.67	11.57
19	77.24	2.05	16.96	.93	2.81	9.01	74.51	4.57	11.91
20	79.05	1.90	15.29	.84	2.92	9.07	72.98	4.01	13.94
21	81.39	2.46	13.17	.92	2.06	13.22	70.76	4.95	11.17
22	79.54	2.70	14 63	1.01	2.12	13.19	71.51	4.45	10.85
23	79.36	2.28	14.71	.97	2.68	11.04	71.27	4.70	13.99
24	80.05	2.32	14.02	.94	2.67	11.63	70.28	4.71	13.38
25	78.05	1.98	16.39	.81	2.77	9.02	74.67	3.69	12.62
26	80 06	2.14	14.57	.97	2.26	10.73	73.07	4.86	11.34
27	80.53	2.32	14.30	1.01	1.84	11.92	73.45	5.19	9.44
28	76.16	2.77	17 65	.69	2.73	11.62	73.66	2.94	11.78
29	79.45	2.42	14.43	.87	2.83	11.77	70.22	4.23	13.78
30	80.94	1.91	13.25	.83	3.07	10.02	69.51	4.35	16.11
31	73 60	1.80	19.83	.88	3.89	6.82	75.11	3.34	14.73
32	79.79	2.20	14.55	.86	2.60	10.89	71.94	4.25	12.92
33	80.48	1.92	14.03	.86	2.71	9 84	71.87	4.40	13.89
34	79.35	2.30	14.72	.91	2.72	11.13	71.28	4.41	13.18
35	79.33	2.47	14.51	.81	2.78	11.47	70.02	3.91	14.60

COMPOSITION OF POTATOES —*Continued.*

No.	In Natural Condition.					Figured to Dry Matter.			
	Moisture	Protein	Starch	Ash	Undet. Matter	Protein.	Starch	Ash	Undet. Matter
36	76.90	2.18	17.71	.82	2.39	9.43	76.75	3.55	10.27
37	80.56	2.17	13.65	.97	2.65	11.16	70.22	4.98	11.16
38	79.92	1.80	14.25	.85	3.18	8.96	70.97	4.23	15.48
39	82.60	2.40	11.58	1.01	2.41	13.79	66.55	5.81	13.85
40	79.29	2.93	14.03	.88	2.90	14.15	67.75	4.25	13.85
41	81.96	2.21	12.28	.91	2.64	12.92	68.07	5.04	13.97
42	78.20	2.36	15.88	.97	1.59	10.82	72.89	4.45	11.84
43	80.88	2.88	13.23	1.02	1.99	15.06	69.20	5.33	10.41
44	76.26	2.75	16.17	1.02	3.80	11.58	68.11	4.34	15.97
45	80.47	2.49	13.30	.98	2.76	12.75	68.60	5.02	14.63
46	80.48	2.67	14.46	.79	1.70	13.68	74.08	4.05	8.19
47	79.75	2.24	14.43	.83	2.75	11.06	71.26	4.10	13.58
48	77.37	2.87	16.50	.91	2.35	12.24	72.42	4.02	11.32
49	81.44	2.30	12.82	.99	2.45	12.39	69.08	5.33	13.20
50	80.37	2.43	13.89	.78	2.53	12.43	70.76	3.97	12.84
51	77.52	2.50	16.64	.93	2.41	11.12	74.02	4.13	10.73
52	78.01	2.29	16.15	.94	2.66	10.41	72.53	4.23	10.41
53	78.07	2.01	15.90	.78	3.24	9.17	72.50	3.56	14.87
Minimum.	73.60	1.76	9.57	.69	1.70	6.82	58.31	2.94	8.19
Maximum.	83.59	2.93	19.83	1.13	4.86	15.06	76.75	5.81	22.01
Average.	79.42	2.29	14.47	.90	2.92	11.21	70.14	4.44	14.21
GROWN IN THE MARITIME PROVINCES.									
54	79.16	1.78	14.78	.87	3.41	8.53	70.92	4.17	16.38
55	73.73	2.05	20.03	.85	3.34	7.42	76.25	3.24	13.09
56	75.37	2.93	18.41	.87	2.41	11.90	74.74	3.53	9.83
57	73.92	2.75	20.05	.73	2.55	10.54	76.88	2.80	9.78
58	77 61	2.15	16.79	.97	2.48	9.60	74.99	4.33	11.08
59	79.36	2.11	14.83	.75	2.95	10.22	71.84	3.63	14.30
60	75.48	2.40	18.65	.79	2.68	9.78	76 06	3.22	10.93
61	74.94	2.59	19.56	.81	2.10	10.33	78.06	3.23	8.38
62	77.58	2.11	16.84	.96	2.51	9.41	75.11	4.29	11.18
63	75.56	2.13	18.62	.82	2.87	8.71	76.19	3.36	11.74
64	76.82	2.41	17.13	.88	2.76	10.39	73.90	3.79	11.92
65	77.67	2.32	16.08	1.02	2.91	10.39	72.01	4.57	13.03
66	73.39	2.34	20.74	.85	2.68	8.79	77.95	3.19	10.07
67	79.76	1.65	14.98	.85	2.76	8.15	74.01	4.19	13.65
68	78.24	1.48	16.45	.83	3.00	6.80	75.60	3.81	13.79
69	74.65	1.72	20.14	.76	2.73	6.78	79.45	3.00	10 77
70	76.67	1.84	17.76	.88	2.85	7.89	76.12	3.77	12.22
71	77.36	1.97	17.31	.90	2.46	8.70	76.46	3.97	10.87
72	79.52	1.79	14.65	.97	3.07	8.75	71.53	4.73	14.99
73	77.95	1.64	16.83	.86	2.73	7.44	76.28	3.95	12.38
74	78.76	1.60	16.34	.82	2.48	7.54	76.93	3.86	11.67
75	81.70	2.26	12.78	.87	2.39	12.35	69.84	4.75	13.06
76	79.54	1.96	15.29	.76	2.45	9.58	74.73	3.71	11.97
77	79.35	2.10	15.39	.85	2.31	10.17	74.52	4.11	11.20
78	80.83	1.80	13.26	.98	3.13	9.39	69.17	5.11	16.33
79	81.26	1.63	13.58	.98	2.55	8.70	72.46	5.23	13.61
80	79.30	2.24	14.18	1.07	3.21	10.82	68.50	5.17	15.51
81	78.60	2.12	15.19	.98	3.11	9.90	70.98	4.58	14.54
Minimum.	73.39	1.48	12.78	.73	2.10	6.78	68.50	2.80	8.38
Maximum.	81.70	2.93	20.74	1.07	3.41	12.35	79.45	5.23	16.38
Average.	77.39	2.06	16.66	.88	2.87	9.24	74.34	3.97	12.45

There is a comparatively wide variation in the percentage of water in the various samples of potatoes, but, as we have no record of the manner in which the potatoes were kept before reaching us, we cannot lay much stress on this point. The average percentage of moisture in the Maritime grown potatoes is 2 points lower than the Ontario grown. This may be natural to the potatoes, or may be due somewhat to loss of moisture during transportation to Guelph.

Turning to the composition of the water-free material, we notice that the percentage amount of proteids varies from 6.82 to 14.43 in the Ontario potatoes and from 6.78 to 12.35 in the Maritime Province potatoes. One such test as here reported is not sufficient to prove that these results are characteristic of the varieties; but it does show that there is a very wide variation in the amount of this valuable constituent in potatoes. It is true we have no record that the potatoes were all properly matured when harvested, but the variation is nowhere more evident than among the first thirteen samples, which were obtained from the Experimental Department, where data was carefully collected with reference to maturity. The starch in these same varieties is fairly uniform, but, with one exception, they are from 3 to 20 per cent. below the average of the Ontario grown potatoes. A study of the data presented in the two tables seems to indicate that mealiness in the potato is not associated with high proteid, in fact, it would appear as though low proteid and high starch content are the desired factors in quality, especially in mealiness, of the potato. With reference to these points, it is worthy of notice that the average proteid content of the Ontario potatoes analyzed is 2 per cent. higher and the starch 4 per cent. lower than in those received from the Maritime Provinces. Also that the average total figures given for quality are 7.1 lower for the former than for the latter. The greater part of this difference is made up in the column showing the mealiness of the potato. If we compare the marks given for mealiness of potatoes containing 10 per cent. or lower of proteids, we find that, with very few exceptions, they stand at over 30, with several above 37; whereas comparatively few of those containing higher quantities of proteids received as many as 30 marks.

One season's work is not sufficient to draw any definite conclusions, but the work above reported indicates wide differences in the composition of the various varieties of potatoes, which may be influenced by soil, freedom or prevalence of blight, potato beetles, etc., or may be due to variety. A further study of composition and quality of potatoes where all conditions of soil and growth are known would be of interest and profit to potato growers and to the potato consumer.

SEED CORN.

By T. H. Mason, Straffordville.

The corn crop is one of growing importance in Ontario. It has been amply demonstrated that the corn plant succeeds well in nearly all districts of the Province, that it can be easily and cheaply handled where proper methods are followed, that it is a valuable crop for cleaning the land and when preserved in the silo gives a very large amount of succulent and digestible food.

On the other hand, outside of a comparatively small area, the importance of the crop for the production of grain is not generally recognized and yet if suitable varieties are selected and proper cultivation given, Ontario compares very favourably for grain production with the very best corn growing states of the Union to the south of us.

Varieties Suited to Local Conditions of Soil, Important. We have such a very large number of varieties that one is quite perplexed in making a selection. While attention should be given to the experiments carried on at Guelph and Ottawa, even then it will be necessary to do a little experimental work on each particular farm to determine which is the best variety for that particular farm.

Corn is a gross feeder and requires an abundance of plant food to give best results and one of the most common mistakes is in seeding too thickly. Three stalks to the hill with hills from 3½ to 4 feet apart each way, according to the variety, will give best results in grain; where more seed is used there will be a larger amount of fodder, but it will be at the expense of the grain.

Some Varieties Suited to Ontario. For Northern localities: Blue Blade, Early White Flint, Eight Rowed Yellow Canada. For Central localities: Longfellow, Compton's Early, Sweet Rose, King Philip, North Star Dent. For Southern Ontario: Wisconsin, White Dent, Salzer's North Dakota, Thoroughbred White Dent, Flint, Leaming.

Having decided upon the variety that suits our particular soil and locality best, then especial attention should be paid to the selection and care of the seed. There is no reason that Ontario farmers should import their seed as they do year after year, and so often with undesirable results. Corn responds to selection perhaps more quickly than any of our ordinary farm crops.

By going through the fields about ripening time making a little study not only of the character of the ear but also of the stalk, a selection could be made that would form the basis of future improvement. The stalk should be leafy, of moderate growth, should stand up well and carry, in the dents, one large ear. In the flints, it would be desirable to try for two ears, but not more. The ears should be of good length for the variety, packed full with straight even rows of corn, filled to the tips of the cobs and with the butt ends fully and evenly filled.

In this climate it is desirable to select from the earliest ripening ears. This seed should be husked leaving enough husks to braid up with, then hung up at once. The old fashioned summer kitchen is an ideal place to hang the seed corn, insuring its perfect drying before freezing weather begins. The seed keeps best when left on the cob all winter.

From this selected seed corn, another selection should be made, taking only the most perfect ears and planting them in a special plot for seed producing purposes. Very interesting and profitable studies may be made by selecting a stated number of ears, planting the most perfect seed of one ear in one row, and so on till the plot is completed. Then just after tasseling and before the pollen has begun to fall, go through and remove the tassels of every other row, thus giving cross-fertilization of one half of the rows by preventing self pollination. The results obtained in this way have in many instances been really wonderful.

During the past few years at some of the experimental stations in the United States, an immense amount of work has been carried on with the corn plant and with the most gratifying results. Our experiment stations

in this country are also taking up this matter and the Canadian Seed Growers' Association has done a great deal to encourage the improvement of this plant among its members. With the interest created and with our trained investigators at work, I am hopeful that the time will come in the very near future when we will have varieties adapted to every variation of soil and climate in the Province and giving us results vastly greater than those that we now obtain.

FARM CONVENIENCES.

By Henry Glendenning, Manilla.

In attempting to write an article upon this subject we are perplexed not by the lack of material but by the multiplicity of things that present themselves for treatment. So many things are necessary, and are found on nearly every farm in the Province, that it would be useless to particularize them, such as the ordinary implements of tillage and harvesting machinery, therefore, I will deal with some conveniences that are common enough in many sections but are not to be found on every farm.

Lay Out of Farm. The farm should be laid out in fields of good size and of such shape that they can be easily worked. The average Ontario farm has too many fields upon it. They should be oblong rather than square; they should be approached by lanes that lead from the barns and should each be furnished with a gate of sufficient size to allow any farm inplement to pass through them with ease. I am aware that we cannot always have the lanes where we would like, or the fields of the most desirable shape owing to streams, ravines, rock or pieces of swamp that have to be taken into consideration.

Location of Buildings. No hard and fast rule can be laid down as to location, there being so many things to be considered. If the farm consists of say one hundred acres, with a frontage on the road that makes it nearly square, and if a suitable building site can be secured the buildings should be half way on the farm along the public road The dwelling should not be far from the highway. The outbuildings, again, should be beyond the house, with a lane from the public road passing the buildings to the back fields of the farm. But many things in addition to those already mentioned prevent this. It has been so common in this country for the settlers to erect their small home on the first piece of land cleared, often with no regard to convenience to the uncleared portion which was by much the larger part. Near this small house there were small outbuildings put up and an orchard planted. As prosperity came, larger and more substantical barns were built, followed by a fine brick or stone house on a fine dry piece of ground. The farmer knows these are not where they should be, but they cannot be moved in the ordinary course of events. This all came from the pioneer who cut the first trees, but he has long rested from his labors and we will place no blame on him.

Buildings. We will not attempt to speak upon farm buildings in general in an article of this kind, as it would make it altogether too lengthy, but will mention two useful buildings. First, there should be a shop or place for making repairs to machinery or other things required about the farm. It should be furnished with the ordinary wood working tools, a good strong vice and such iron working tools as will enable the farmer to make many repairs that are almost daily required on the farm. He should have on hand

a full assortment of bolts, rivets, screws, washers, etc., also some good hardwood lumber consisting of oak, ash or rock elm of different thickness. I do not propose that the farmer should become his own blacksmith or wagon maker, but if he has these requisites on hand the repairs can often be made in less time than he could go to the village shop.

Second, there should be a building in which a stock scale is placed. The man who is buying, feeding and selling stock, and has no way of telling the weight of animals but by guess, is at a serious disadvantage when dealing with the expert drover, and he often makes a mistake in fattening animals that fail to put on the weight that he is led to expect from the amount of food consumed. By weighing his animals at regular periods of say one month apart, he knows which animal is making a profit and which is losing money. The wise man will soon weed out the unprofitable animals.

Water. A good supply of pure water is one of the essentials of successful farming, in these days of feeding nearly all that grows upon the farm. On account of the high price of labor, the farmer cannot afford to pump the water by hand for a large herd, nor should dairy cows be turned out in the cold days of winter to drink at a trough once or twice a day. Even if it is just outside of the stable, there is loss of time tying and untying them and considerable loss in the milk flow from drinking a large draught of cold water which is apt to chill them and which retards milk secretion.

By using some kind of power to pump the water into a tank and have it fed into a drinking trough before the cattle, with a self-regulating valve, it does away with a great deal of extra work and the animals will be able to drink as often as they please. In this way there is no danger of their ever taking so much as to cause them to chill. This same tank can be utilized for house purposes and save a great deal of labor in the kitchen. By having the pipes attached to the kitchen range it will feed automatically and a full supply of hot water is always ready. This same tank will supply the bath room with both hot and cold water.

Power. Nearly every farmer requires some sort of power on the farm, for pumping, grinding, pulping roots, running the cream separator, sawing wood, etc We have six powers that are more or less used in this Province: water, steam, electricity, wind, gasoline and animal. We will give some consideration to each of them.

Water power is one of the best, being steady and reliable, where you have the supply and head. It is also, as a rule, cheap, but the number of farmers who can make use of it direct, are few.

Steam is a very reliable power. It is simple and sure to go when set in motion, but it is too expensive for the small or average farmer. There is also an element of danger from fire, besides the danger from frost twisting the pipes in the winter.

Electricity. This appears to be the coming power, where it can be procured at a reasonable rate, as it is always ready when required. It can be used for lighting, heating, and running all kinds of machinery at the shortest notice. The farmers of this Province do not appear to be alive to the possibilities of electric power on the farm. The companies that have been organized for electric development look to the cities, towns, and villages for their customers, and overlook the farmer, although their wires pass his door. If those power companies would bring the matter properly before the farmers, a large amount of power would be taken at profitable rates. It is time the farmers are waking up to the fact that many motor powers are being developed and are becoming a monopoly of the towns and villages. The farmer will be calling for a share of this power when it is too late.

Wind. This is the cheapest of all the powers and gives excellent satisfaction for many farm purposes such as pumping water, pulping roots, grinding grain, sawing wood. For grinding, the farmer has to watch and take advantage of the strong winds. Its weak point is that it does not run when there is no wind, and it is too irregular for running a cream separator.

Gasoline. This power has many things to recommend it. It is compact, strong and usually goes when you want it.* Sometimes it refuses to run when you require it the most. There is also the element of danger of fire or explosion as is evidenced by the higher rates asked by the Insurance Companies where it is used.

Animal Power. There are still a few old sweep horse powers in use, but they are so clumsy and take up so much room that they are scarcely worth consideration by any person who has any thought of a modern power. The tread power is a good power, does not take up much room and on that account can be easily placed in a building. You can always be sure of it running when you apply the motive power. It is as steady as either steam or water, and its speed is readily controlled by the governors. It will give more power for the number of horses applied than the sweep power and there is no danger of fire. Its weak points on a farm are that you require horses or other animals to drive it. This is sometimes inconvenient in the summer time when the horses are needed on the land. We frequently hear it stated that this power is hard on horses. There are two causes for this. First, excitement of the horses when they find the platform giving away under their feet, and they make no forward progress in their walking. Second, the platform is set too steep which compels the animals to walk up a steep incline, often making two horses do the work that should be performed by three. A one horse tread power is one of the best investments on the farm where domestic help is scarce. By having a power located somewhere near the dwelling, it can be used for running the cream separator, churn, washing machine, circular saw, etc.

Our farmers should study to add all such conveniences as will lighten their work or increase the efficiency of their labour.

MY METHODS OF UNDERDRAINING.

By A. H. Foster, Twin Elm.

I first take my course in the spring of the year when the water is running on the top of the ground, and I find that to be the best way to lay out your drains, in order to follow the natural courses, and to make a success of it you must do that. I found that by digging a drain 2 to 2½ feet deep that I could dry out that particular place with a tile from 2½ to 3 inches, according to the quantity of water running there, until I come to where there are other courses joining into that one, I then continue it with a tile a little larger from 4 to 6 inches in that main one, until I come to my outlet, using the 2½ or 3 inch in the branches. I give herewith a plan of my drains, with the sizes of tiles I have used.

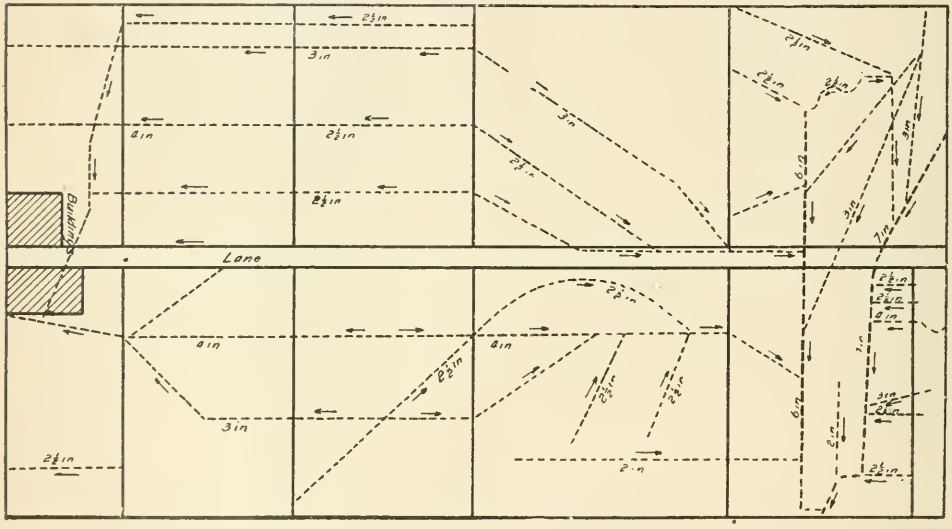
In digging my drains I run off the top score with an ordinary plough, then I had a ditching machine I used with two teams of horses. I dig 2 feet deep with it, after that I level with a spade, then I make a track with

*However, the price of gasoline is high, its offensive smell injures the cream, and it is not steady enough to run a cream separator.

a scoop shovel in the centre of the bottom and lay my tiles in it. I did not use the machine on all of my drains, but I did on a good many of them. Before laying the tiles I use a 16 foot straight edge and a spirit level, just merely letting the spirit cross the line, I think it would be about ⅛ of an inch to the length of my straight edge of a fall, in that way I find that all my underdraining work successfully, and I have 27,000 feet underground.

When I come to cover in a drain I first put in a little of the clay that has been taken from the bottom of the drain, enough to bring it level with the tiles. I use the bottom soil to put around the tiles, as I found that the top soil being loose, was liable to run and get in through the joints and lodge in the tiles. I then spread in a little straw to the depth of about two or three inches, then I fill in with an ordinary plough, using one horse.

I have one main drain that might be classed as an engineer drain, or open ditch, leading from several neighbors. I have a lot of small underdrains running into it, and I found it very difficult to keep them from filling up at the mouth with cattle tramping it in, when the fields it runs



through were in pasture. I put a seven inch tile in the bottom of it, and covered it in 1½ feet deep, leaving a good sized drain on top for overflow water in the spring of the year, and I have no more trouble with it. I raised as good a crop of oats last summer directly over it as I did on any other part of the field.

In laying the tiles in a drain you want to always begin at the back end. Some men will say it is better to begin at the mouth and level back, but I find it is much easier to get a gradual fall to begin at the back and work down.

Getting your level, with a very slight incline, is a very important step towards success in underdraining, but underdrains once properly laid are there for a lifetime. I have no use for open drains at all, there are very few of them in the country that an underdrain would not do the work as well, and I think a great deal better. Then you are at no loss whatever as you crop right over the top of your drain. There are so many benefits derived from underdraining that I could not begin to enumerate. When I bought my farm it was all cut up with open drains, and a number of

them had no fall to carry off the soakage water. I have filled them all in. In some place I had to cross the open drains in order to follow the natural course with the underdrains.

I am sure that every tile I have underground has paid for itself over and over again. When I look back and think of plowing fields at each side of where a drain was required or else tramping through water to plough the whole field, and think of how I can go on those same fields now since they are underdrained as early as I like in the spring, and work from one end of the field to the other, it makes me wonder why people do not get to work and underdrain their farms. A few of the benefits from underdraining are, your land dries out quicker in the spring; you get your crop in earlier; you have a great deal better yield; and a very superior quality of grain. If you look at the field plan, in the upper left hand corner you will see quite a net work of underdrains. When I commenced to drain that field, my neighbor across the fence asked me what I was trying to do, I said I am going to try to drain this field so I can raise a crop on it. He laughed at me and said that it could not be done, that the man who owned the farm before I got it tried that and failed. However, I went ahead, and it is now a beautiful field, and grows the full of the earth all over it every year. So I believe that any farm can be underdrained if there is an outlet at all.

THE BEAN INDUSTRY OF ONTARIO.

By G. G. White, B.S.A., Ontario Agricultural College, Guelph

Bean growing during the past half century has increased from a very small beginning to one of the most important industries in Kent and part of Elgin counties. One of the leading farmers of Kent recently made the statement that the bean crop of that county was of more value than the wheat, oats and barley crops all put together. Upon it they have for years past depended for the main source of their revenue, and to the bean crop may be attributed the making of South Kent one of the most wealthy, as well as one of the most progressive sections of the Province. While beans are grown almost all over Ontario, yet the counties of Kent, Elgin, Middlesex, Lambton, and Essex grow practically all that are shipped in or out of the Province. The true bean section comprises but a small part of these counties; yet, notwithstanding the limited extent of the territory, for many years over one million dollars worth of beans have been exported to the cities, mines and lumber camps of Canada, as well as to foreign counties. In the fiscal year, 1905, over 237,000 bushels of beans, having a value of nearly $305,000 were shipped to foreign countries, the trade reaching France, Great Britain, British and French West Indies, Cuba, and many other parts of the world. During the fiscal year 1906, owing to a much smaller crop, our exports were lighter, amounting to 88,663 bushels, with a value of $139,908.

The first beans were introduced into the district in March, 1856, by Mr. Seger Handy, of Morpeth, Howard Township, Kent. Mr. Handy was born on a New York farm and moved to Ontario during the first settlement of this district. Being familiar with bean growing in his native State, he soon introduced some seed into Ontario. In the Spring of 1856, he brought in two bushels of beans, which had cost him in the States $3 a bushel. Some

claim that there were beans in the country before this time, but even if there were, it was not until Handy introduced them from New York, that the industry began to grow commercially. Early in the past century a French settlement was established around Paincourt in North Kent. These people are also said to have grown beans at an early date, but all they grew were for their own use, and no beans were shipped until after the industry developed in the South. Still there is no doubt that after a market was opened up bean growing spread out from this French settlement along the Thames River, and hastened the establishment of the industry in the North. The first beans Mr. Handy brought in were sown along the town line between Howard and Harwick about two miles from Lake Erie. These he shipped by boat to the States, there being no market in Canada at that time. Even the American market was not extensive, and beans seldom sold for over one dollar a bushel, which left them an unprofitable crop at that time, owing to the labor they involved. Largely for this reason the farmers were somewhat slow to commence growing them. The American civil war about this time caused a large demand for beans, and really gave the first stimulus to the industry. However, for some years, the great drawback was the need of a suitable market. The first Canadian market opened up was among the French in Montreal. A buyer was soon located in Chatham, and that point was for many years, the centre of the bean trade. At first the beans required a great amount of labor. They were planted, cultivated, and pulled by hand, and were thrashed either with a flail or by tramping the grain out with horses. The ordinary grain separator was used until about 1894, when a regular bean mill was introduced. Bean growing first spread from the starting place, north and east and west alongside the ridge This high, dry land was more cleaned at that time; the land near the lake which has since become the best part of the bean district, was not cleared up for some years later.

The bean growing section of Ontario is confined to that part south and west of a line north from Port Burwell to about Ingersoll, and west to near Sarnia. However, there is only a small portion of this district where beans are grown to any extent The average bean crop in this whole territory comprises about 45,000 acres, and produces on an average about 750,000 bushels each year. Of this 45,000 acres, nearly 40,000 are in the townships of Harwich, Howard and Oxford, in Kent and in Alborough, West Elgin, the remaining 5,000 acres being scattered here and there throughout the rest of the district.

It will be seen on the map, that the whole district is divided into four parts, according to the extent to which beans are grown. Sections 1 and 2, are where the greater part of the beans are raised, and where they are grown with the most success. The first district around Rondeau is the finest section for bean growing in the whole Province. It is almost certain of a good crop every year, whether the season be wet or dry. The soil is a rich, black loam, resting upon a fairly open clay subsoil. It has evidently been an alluvial deposit, and it contains a large amount of fertility. The contour of the land is slightly rolling, thus affording excellent natural drainage. This, however, is in all parts supplemented with tile drains in the hollows and natural water courses, and in some parts a full system of tile drains is laid. While it is thus protected against a wet season, it is also protected against a dry one. Being on a small cape, as will be seen by the map, and being almost in line with the lake shore on either side, it is subject to very heavy dews, which are deposited from the moisture laden air coming from the lake on three sides. The Rondeau, a shallow, land-

MAP SHOWING THE BEAN DISTRICT OF ONTARIO.

The Bean District of Ontario is divided into four parts. A heavy dotted line marks the boundary between divisions. Division No. I is represented by vertical dotted lines. This division comes first in successful bean growing. Division No. II, represented by left oblique lines, comes second in this respect, Division No. III, represented by right oblique lines, comes third, and Division No. IV, represented by the remainder of the Province lying west and south of the dotted line from Port Burwell, on Lake Erie, to Lake Huron, takes fourth place. These different divisions are fully discussed in the accompanying article.

locked body of water, becomes heated to a high temperature, and there is no doubt very great evaporation must take place from it. This warm moisture laden air coming north at night over the cooler land deposits a large amount of moisture. The soil is also in a fine powdery condition, and retains a large amount of moisture. These are the reasons which are given to explain why the crop in this section is so seldom injured by drouth. When the crop farther north on all kinds of soil will be dying, that along the lake will be quite green. The close proximity to the water, and particularly to the hot water in Rondeau also moderates the climate, and prevents extremes, so it seldom, if ever, happens that the crop in this district is injured with frost either in spring or fall.

There is really no district line of demarcation between this district and that surrounding it. The loam soil gradually changes to clay, and as the soil becomes heavier the bean acreage falls of considerably. Along the north side of the district No. 2 is the "back" ridge. This ridge is about a mile wide at the east end, and varies as you go west, becoming much narrower as it approaches the lake. The soil on this ridge varies from a sharp gravel to a sandy loam. It rests on a gravel subsoil, and has excellent natural drainage. There is another ridge from a mile to a mile and a quarter farther south, running parallel with the north ridge. The front ridge, as it is called, is quite traceable through Oxford and Howard, and it joins the back ridge about Blenheim. Between these two ridges the land is very variable; some parts are heavy while others are quicksand; but the greater part of this land is a good sandy loam, and well suited to beans. It will be seen on the map that the third district runs into the second district almost to Blenheim. Just south of the front ridge there is a narrow strip of white clay, and this changes to heavy, black clay, as one goes farther south. This heavy clay is not well adapted to beans and few are grown.

The third district on the map has beans growing almost all over it, but in most parts they have not become a general crop on every farm. One year a farmer may have a considerable acreage, and the next year have none. In the two districts first mentioned, beans have come to fill a regular place in the rotation, but in this part the acreage sown each year varies a great deal. This district contains almost every kind of soil, much of it being well adapted to beans and other parts not so well suited. Beans are grown quite extensively along the Thames River. The soil is a rich dark clay loam. This land, if properly drained and cultivated, will grow good beans, and some farmers are having good success with it. Many farmers in this district, however, are going out of beans, claiming they are too hard on the land. The bean plant belongs to the Leguminosae, an order of plants drawing all their nitrogen from the air, and it should not be a hard plant on the soil. It is true that the plant draws fairly heavily on potash and phosphoric acid, but when the light soil on the ridge has grown beans for many years without any appreciable decrease in yield, it seems rather absurd that strong clay land should become exhausted so soon. The conclusion that beans are hard on the land is largely based on the fact that wheat is not so good sown after beans as after other crops. I found this difficulty with the wheat after beans wherever the soil was heavy, while on the loam and sand, the bean land is considered the ideal land for wheat. The only explanation I could find for this was in the physical condition in which the soil was left after the beans were harvested. Clay loam, or clay, with constant cultivation during the summer, becomes very fine and powdery. The wheat is always sown after beans without plowing the land.

The fine powdery soil on exposure to the winter rains runs together and bakes very hard. Thus the wheat is either winter killed or makes a poor, slow growth in the spring. Besides the land becomes very flat, and not being well drained, water is apt to lie on the crop. The soil also becomes packed very hard with the cultivation, and this interferes with free drainage. Much of the land about Chatham is not giving the success with beans it did a few years ago. The reason for this seems to be in the condition of the soil. They have cropped the land year after year, without turning under any clover or manure until it has become depleted of humus. Consequently, the soil has become so hard in many parts it is very difficult to get a good crop of beans, or to get a catch of clover by which to bring the soil back into a fertile condition. The crop is very much at the mercy of the weather, and unless the season is very favorable, a poor crop will be the result. The past few years have been too wet, and many of the beans on the clay spoiled, so that a low priced sample was the result. The beans also took a second growth when they should have been ripening, and this green growth prevented the crop from being cured as it should have been. Much trouble has been caused through the beans not ripening up early enough in the fall. Some account for this by the fact that immature seed has been used. Since bean pullers have come into use, the beans have been pulled a little green and they claim that the beans are getting later each year. Whether this be true or not is difficult to say, but, as with all other grains, mature seed should always be used. It may be that this district is a little far north, but as beans are grown many miles north of Chatham with very good success, this would not explain the trouble. Farther south on the ridge, and at Rondeau they have no trouble in getting the beans to mature early.

Because of these difficulties with the crop, quite a number of the farmers are going more into sugar-beet growing, and stock raising; and the acreage of beans is decreasing. Many, however, are continuing the crop, and by proper cultivation and drainage are making a success on the heavy land. Almost all the failures have been directly or indirectly brought about by poor drainage, improper cultivation, and lack of clover in the rotation.

In the eastern part of this district through Alborough, Dunwich, Southwold, and Yarmouth townships the bean acreage is increasing very rapidly. They seem to have better success here than they do in the north along the river. The soil is variable but the greater part of it is well adapted to bean growing. Ten or fifteen years ago, no beans of any account were grown in this district, but they have increased greatly of late, until last year, in the township of Alborough alone nearly 125,000 bushels were raised. Each year the acreage is increasing and the report of farmers seems to indicate that it will increase still farther. All along the lake shore they have given very good results. This country is for the most part rolling, and affords good, natural drainage which largely accounts for the success of the crop. I find in the newer parts the farmers in handling the bean crop, are not employing horse labor as much as they should. They are doubtful about using the harrow and side delivery rake, but they must come to this method as they have had to come to it in other parts.

The fourth district grows very few beans. In this part the principal bean sections are along the banks of the Sydenham River, around Alviston and in the south-western part of Middlesex county. Beans are not a regular crop in very many parts of this district; being a late crop they are generally sown where corn or some other crop has failed. The great draw-

back in the newer bean districts where only a few acres are grown is the lack of a good market close at hand, and of the proper machinery for handling the crop. The amount grown in many districts is not great enough to bring in a bean mill, and much loss is caused by using the regular grain separator. I have not been over much of this territory, but from reports which I have received of it, I find beans to be grown here and there throughout the greater part of it. South West Kent is a heavy clay soil, and has very few beans. Essex county has tried beans several times but they have not been a success. The soil in most parts of Essex is too heavy and is poorly drained. Tobacco is displacing beans in Essex and West Kent.

Culture.

The culture of the bean plant varies a great deal with soil, climate, and location. What will give best results in one part, will not give success in another and in discussing the subject it will be necessary often to refer to various parts of the bean district.

The Soil upon which beans are grown varies a great deal. They are grown on everything from a heavy clay to a light sand. However, the appearance of the crop readily shows that all these soils are not equally suited. The best success has been got from a loam soil, well drained. After a loam, anything from a strong sand to a clay loam has given very good results when properly handled. A soil that has given remarkable results is a gravelly loam, or in some parts, it might be called gravelly clay. The soil contains a large percentage of sharp limestone gravel, mixed with another constituent much of the appearance of clay. The gravel keeps the soil open, while the clay accounts for its durability. This land has stood the cropping for many years and has shown very little decrease. On a dry season, however, the crop is more liable to suffer than on the loam.

On the other hand, there are some soils upon which it would never pay to grow beans. A black muck, such as the north-western part of East Dover townships, is very unsuitable. It tends to produce a great mat of vines, but very little grain. There are few pods formed, and these are seldom ever filled. Another soil giving equally poor results is a quick-sand, or any soil having a quick-sand subsoil coming anywhere near the surface. Such soils are hard to drain, and are consequently cold and damp. The beans are slow in starting in the spring; insects and diseases attack them, and failure of the crop is almost sure to result. Wherever I have found any trace of quick-sand, there I found the beans doing very poorly; or, as in many cases, they had abandoned them altogether. While such soil is not the best for any crop it is much less adapted to beans. Beans being a quick-growing crop with a short season, require a soil that will warm up quickly and rush the crop along from the start. White clay, I have also found to be one of the poorest soils for beans. It becomes baked very hard, and the plants growing upon it are small and sickly.

The ideal soil for beans must be perfectly drained. Nearly all the district where beans are grown successfully, whether it has good natural drainage or not, is thoroughly underdrained. In many parts that I have been over, particularly in the north part of Kent, on both sides of the Thames River, beans are not giving the results they should through lack of drainage. No crop is more particular in this respect than beans. Three or four hours with the water table at or near the surface of the ground at any time during the growing season, will destroy a whole crop. Then, too,

when the beans are planted, if they get a heavy rain it must be removed at once or the seed will be destroyed. At the time of harvest, if the ground be not well drained, and a heavy rain should come when the beans are pulled, they are sure to be spoiled and the sample very much deteriorated. In many parts of the country where beans were a failure, or an uncertain crop, I noticed the water table standing close to the surface; and even when underdraining was practised, unless it was very thorough, poor results were obtained. A large portion of the country could be made to grow beans quite successfully with more efficient drainage.

A perfect bean soil should also be porous, open and warm, so as to rush the crop along from the time it is planted, and of such a physical nature that it will not bake. Besides these qualities the soil which is able to hold the most capillary moisture and lessen the danger of drouth will always be surer to give success. The loam soil has a great advantage in this respect; the crop on the loam is often green and fresh when north on the ridge the beans growing on the sand and gravel will be wilted and drooping. In all cases, the clay and clay loam soils have stood the cropping well, but their great drawback is in their physical properties. The clay is usually rich in potash and phosphoric acid both of which are largely required by the bean. The sand on the other hand, while it may have the right physical properties and gives a quick growth in a few years of cropping with beans along with wheat, unless fertilizing is practiced, will become so exhausted as not to produce profitable crops. On such soils a good rotation should be followed where clover could be turned down every few years and the beans not planted two years in succession, as is sometimes done. In the district about Rondeau, where beans are grown most successfully, the rotation which has given best results extends over three years, being wheat, red clover and beans. This system of cropping has enabled them to keep their soil in good condition, and by turning down a clover sod every third year the land is always kept open and mellow and in ideal condition for beans. The importance of clover in a rotation has not been fully recognized in many parts, and those parts often where it is not needed. As stated before in some of the clay districts they have stopped the use of clover, until the land is now very difficult to get into proper condition for planting, and is almost certain to bake hard and dry out, so that the bean crop on such land is seldom a success.

Preparation of Soil. Having a suitable soil, well drained, the next important consideration is its preparation. Clover sod has given the best satisfaction in all parts. A few will advocate stubble land, but by far the greater weight of evidence is in favor of a clover sod, and my own observation of the crop growing has gone to confirm this opinion. As to the time of plowing, there is a greater variety of opinion, all of which seems to be correct for the district and conditions in which each particular method is followed. On the clay and clay loam, land which has a tendency to become sticky or hard, the fall plowing unquestionably has given the best results. To give the land the best treatment it should be plowed early and worked during the fall, but few of the farms follow this method. Most of the land is just turned over and left until spring.

On the sandy soil and all along the ridge early spring plowing is practiced. They all claim equally good or better results than from the fall plowing. Where there is any gravel in the soil, it is apt to wash with the winter and spring rains and become very hard if plowed in the fall. But if the land is not plowed in the fall, it should be plowed as early in the spring as it is possible. This conserves more moisture, and gives the land time to become packed down before seeding. By becoming solid below,

capillarity is increased, and more water will be brought to the surface to feed the plants during the dry weather. With late plowing the land is always loose and open, and is very liable to dry out. This is an important consideration, because of the bean having to make all its growth during the three driest months of the year. One field in which I happened to be in served as a very striking example to show the importance of early spring plowing instead of late. Part of the field had been plowed early, and a few ridges left until about a week before planting. A fine seed bed was prepared, and all the field planted the same day with the same seed. In the latter part of July when I inspected the field, it could be plainly seen where the line was, between the late and the early plowing. There appeared to be fully two weeks difference in age, and in fact those on the late plowing could never be more than half a crop. Several fields that were backward and gave signs of being a poor crop were planted on late spring plowing, and could be accounted for in no other way. When the land is loose and dry, there is not moisture enough to germinate the seed rapidly, insects attack the young plant, and whole fields are often destroyed in this way. The bean is a plant which must be rushed ahead from the time it is planted until it is ready for harvesting, therefore anything, such as late plowing, which tends to check this rapid development, greatly decreases the yield.

The only district where I found late spring plowing practised with success was in the first district surrounding the Rondeau. Here many of the farmers do not plow until the clover is a foot or more high. They usually aim to plow about a week before planting time. This gives the clover time to make a good growth, and thus a large amount of fertility is added to the soil. They also claim the clover by fermenting keeps the soil warm, and helps to rush the crop along. The objection to early plowing is that the land becomes packed too hard before sowing. They have had no trouble with the land drying out. This may be because of the heavy dews along the lake, and the peculiarly fine character of the soil, which allows the drawing up of a large amount of water from the subsoil. When plowing is left so late in the spring, however, there is not the chance to kill the weeds before planting time which is a very important consideration. Generally speaking, unless there is a certainty of an abundance of moisture, late plowing should not be practiced.

The aim of spring cultivation for beans should be first, to prepare a fine mellow seed bed, and at the same time to firm the soil so as aid capillarity and secondly, to destroy as many weeds as possible before the crop is sown. Much of the success or failure depends upon the preparation of a good seed bed. Many successful growers have said, "when the beans are above the ground in good condition they are half grown." A delay in germinating or any other check during the early stages of their growth will often be sufficient to cause a failure of the whole crop. Too much importance cannot be laid upon the thorough preparation of the soil. Where beans have been grown for years the farmers have learned this lesson by experience and they would not think of putting beans in soil that was not in first class condition. But in the newer parts of the district, and where beans are not a regular crop, there are many fields which are little more than half a crop through no other cause than lack of proper cultivation of the soil before planting. There is no time when more effective work can be done in cleaning the land of weeds, than before the crop is sown. Where the beans are grown most successfully and where they are kept cleanest they are seldom ever touched with a hoe; but the land is thoroughly worked before planting

and the greater part of the weeds killed in this way. By cultivating the land, then rolling, and leaving it for a few days, weed seeds germinate very quickly, and are then easily destroyed.

Planting, like plowing, varies as to time and method, according to the soil and location. Most of the beans are planted from the 24th of May to the 15th of June. Of late years many are tending towards earlier planting, and are claiming better results, but the success depends very largely upon the season. On the ridge and on the sandy soil, and out through Elgin county most of the beans are sown from May 24th to June 7th. Along the Lake shore few beans are sown before the 7th of June, the season being more backward. No conclusion as to the time of planting can be drawn, nor any hard or fast rule laid down. The grower must be guided entirely by his own judgment, and a few general principles. Never sow before the land is in shape, and the weather warm enough to germinate the beans in a few days, even if you have to wait until after the middle of June. I have seen good beans which were not sown until July. If you should sow too early and cold, wet weather keeps the seed from germinating quickly, it will generally pay to cultivate the ground and sow the second time. The seed has become so weakened as to give only a half crop at best, and a poor crop will take just as much work as a good one. If the weather is warm, and the soil in good condition, it is well to plant even as early as the 24th of May as the crop, if it is not set back, will be harvested during the hot dry weather of August, and thus lessen the danger of a spoiled sample, besides leaving the ground ready for wheat much earlier.

There are several methods of planting beans. At first all the beans were planted by hand, but now the bean planter and grain drill are used almost exclusively. The bean planter has given the better results on the lower clay lands. It drops the seed in hills from eight to ten inches apart, and three or four seeds to each hill. It makes a shallow grove into which the seed is dropped, and the earth pulled over in the shape of a small ridge. In this way the seed is practically on the surface of the ground. If a heavy rain should come the beans are not so apt to be destroyed as if they were planted deep with a drill. Besides if the soil is apt to bake after a rain, the beans will have less trouble in breaking through. The bean is a very tender plant in this respect. The least crust will often prevent them from coming through, and whole fields are often destroyed in this way. Another advantage of the planter is in leaving several beans in a place. Three or four beans will raise a piece of crust, where one would have no chance of breaking through. Beans planted with a planter, being on a small ridge are also easier harvested with the "pullers." The grain drill plants the seed much deeper and leaves a small grove over the row. If a dash of rain comes before they are up it is apt to lodge in the hollow and injure the seed or if the land be clay, form so hard a crust that it is impossible for the beans to break through. However, the drill has its advantages on sandy or gravelly soil. With the bean planter, putting the beans on the surface and covering them with the dry surface soil, often they have not sufficient moisture to start them. A few years ago the bean planter was used far more extensively than it is to-day. On the ridge in the loam district about Rondeau, and in fact everywhere except on the clay and clay loam, practically all the beans are planted with the ordinary grain drill, letting every fourth tube run. On the clay, and clay loam, the planter has given the best general satisfaction, and it is still largely in use. A new machine which is giving splendid results is the disk drill. It puts the seed down to the moisture with-

out leaving any hollow for the water to lodge in, as is the case with the ordinary drill. Where tried it has given splendid reults, both on light and heavy soils and promises to be more widely used.

In planting beans the object is to plant as shallow as possible, and yet cover the seed. This brings the seed up quickly, and gives the plant a good start. Beans cannot lie in the ground more than four or five days without being injured.

There is a great variety of opinion regarding the amount of seed to sow per acre. I find men sowing from one peck to a bushel and three quarters. The average seeding is about three pecks. If the soil is poor, a little more might be necessary, but for the average soil, three pecks is plenty and on rich land less might do. Where the farmers were sowing over a bushel, it was on new land; they claimed their land was strong enough to grow more beans to the acre. This, however, is a mistaken idea. The plants plainly showed they were crowding for space, and were producing straw instead of grain. Many sow a little over three pecks to allow for what may be dragged out with the harrows. This amount is of pea beans only; mediums would require a little more, and marrows almost twice that amount. With the difference of opinion as to the amount of seed to use and nothing to show what amount is the best, some valuable experimental work could be done on this question.

Beans are nearly all planted in rows 27 or 28 inches apart. After planting it is best to run over them with a light harrow especially if they have been planted with the grain drill. Unless the season is very dry it is not a common practice to use the roller after sowing.

Summer Cultivation. About three days after the beans have been planted, they should receive a stroke with the harrows or weeder, the harrow being preferred. This breaks the surface crust and leaves the ground loose for the plants to break through, as well as destroying any small weeds which may have started up. When the old bean is above the ground, before the young seedling gets a start, it is well not to harrow them. If the Cotyledons of the old bean be broken off at this time, the plant is apt to die. As soon as it has taken a firm hold on the ground the harrow may be used again, and this kept up at intervals of three or four days until the beans become too large. Always harrow across the row to avoid tearing out a large part of any row. It is well to harrow at least twice after the beans come up. This destroys many small weeds in the rows it would be difficult to get at later. When the plants become too large for the harrow the two horse cultivator is used. Use the shields on the cultivator at first to prevent covering the young plants, and always cultivate as close to the rows as possible. The second time the cultivator is run through, raise the shields a little and let the earth sift in among the plants in the row. This covers up and destroys all the small weeds that may be in the rows, and also forms a mulch among the plants. If the land has been properly prepared before seeding and the crop be harrowed a few times there will be little or no hand hoeing to be done. If the cultivator be properly adjusted and a little earth be allowed to fall each time among the plants it will do the work of several men. Each time the cultivator should be run shallower than before in order to prevent cutting off the small rootlets. At no time should the cultivation be deep. So long as a mulch is formed it is all that is required. It is best not to cultivate when the leaves are damp. The leaves are very tender, and any sand adhering to them is sure to destroy them. Most growers prefer to stop cultivating about the time the blossoms appear, though some will continue as long as they can drive through the rows. Unless is a very dry season, if

the beans are free from weeds, there is little gain from late cultivation. You are apt to destroy many blossoms and small pods, as well as the tiny rootlets which form in great abundance about this time.

The most important feature in bean growing, and the one needing most emphasis, is *clean cultivation*. Where beans are grown with any success they have come to see that beans and weeds will not grow together. No hoed crop requires to be kept as clean as the bean crop. If weeds are mixed with the beans the yield of beans is very much decreased; they are very difficult to pull by machine, and the rake will not work satisfactorily. Besides, when they are mixed with green weeds at harvest, it is almost impossible to dry them properly and the sample is very much deteriorated. The weeds in pulling bring up large chunks of earth which get on the beans and also help to darken and spoil them. Outside the two sections where beans are grown most extensively, are to be found the greatest number of weedy fields. It is not always where the most work is put on that the cleanest beans are, but where the work has been put on them at the proper time and where the land has been properly prepared. In speaking to scores of successful bean-growers, I have found all to be unanimous in this opinion that clean cultivation was the most important thing in successful bean growing and that on many farms the crop did not pay for that reason.

Harvesting. Beans are usually ready for harvesting from eighty to a hundred days after planting. They are best pulled a little green. When green they do not shell so much, and they ripen after pulling, giving a more glossy and ivory appearance to the bean. The method of harvesting is almost the same over the whole district. They are pulled with a two-horse bean puller. This machine is an attachment which can be put on any ordinary two-horse cultivator. It has two large knives set in a V shape, which cut the plants off below the ground and draw two rows into one. The revolving, three-fork, side delivery rake is then used and eight rows of beans thrown into one windrow. The machine is used almost everywhere and will do the work of a dozen men. The beans should be turned after every shower, or every few days whether there is rain or not, until they are dry. If they are turned when a little damp, the rake may be used without danger of shelling, and it will turn satisfactorily twenty to twenty-five acres a day. The object in curing beans is to keep the bunches or windrows from settling on the ground. If the pods get down to the ground and the air has not free access to them, the beans are sure to be blackened and spoiled. Most of the beans are loaded with a fork, but a few growers are using the hay-loaders. As the beans must be very dry when handled, this method shells considerably, and is not generally used.

The thrashing is done with regular bean mills, which are made for the purpose. In some districts, where there are not enough grown to pay for a bean mill, they are using the ordinary grain separator. This machine, however, breaks a great many beans and is not satisfactory. The bean mills leave the beans ready for the market. Some are run through the fanning mill before selling but most of them are sold direct from the mill. The old practice of hand picking on the farms has gone out altogether.

Insects and Diseases.

Few farm crops are more free from insects and fungus attacks than the bean crop. While there are several insects which prey upon the plant, none have done serious damage in Ontario, and none have become so plentiful as to require more than careful prevention. The most destructive insect pest, the

bean weevil, has not as yet found its way into Ontario. This insect has been the means of stopping bean-growing in many parts of the United States, and if it ever becomes plentiful in Canada it may be the means of stopping bean-growing here. Farmers and dealers should be very careful when bringing seed from foreign countries to have it free from the weevil. This insect is found in the ripe-bean, much the same as the red weevil, and can readily be detected. Beans containing it should be well fumigated with carbon bisulphide, or else burnt. I have found in almost every case where insects or disease were doing much damage that there was something wrong in the handling of the crop. The soil was not fertile, was not properly cultivated or some other condition was not right. Where the crop was doing well and was properly handled there was little trouble with insects or other pests.

Cut-Worms. The bean along with nearly every other crop, falls a prey to cut-worms. In some parts they have done considerable damage, but never so much damage on beans as on other crops. Often as many as three crops have been destroyed off a piece of land in one spring, and beans planted on the land would not be touched. Many farmers complain of a small worm about half an inch long, which eats off the plumicle just as the beans have pushed above the ground. These beans seldom mature when thus attacked. I have seen whole fields which have had to be replanted because of the attacks of this insect. From all reports which I have heard of this insect and its work, it appears to be one of the cut-worms. I was not in the district where they were at the time they were working and consequently, I was unable to secure a specimen. I have never heard of this insect doing damage where the seed comes up quickly. It is always where it lies in the ground for sometime that the plant is attacked. Therefore the best way to prevent it is to use fresh seed, have the ground in the best possible shape, and not to sow unless the weather is warm. There is no practical way of combatting the cut-worm on a large scale. Poisoning with bran and paris green is sometimes resorted to where they are very bad, but if preventive measures be observed such treatment will not be necessary.

Pale Striped Flea Beetle (*System blanda.*) This insect is about one-eighth of an inch long and about one third as broad. It has two yellow stripes down the back. It is a very active insect, and is difficult to catch or even to see. It closely resembles the ordinary turnip flea-beetle, but is much larger. It usually appears about the 25th of June, and continues to the middle of July, doing considerable damage during that time. The bean appears full of holes, much as if it had been shot through. The insect eats off the upper epidermis and often the lower epidermis is left a pale film, which soon falls away, leaving a round hole. I have found this insect also to be worse where the beans were not under the most favorable conditions. Often a knoll of hard clay or other poor soil in the middle of the field, would be almost destroyed while the plants around on good soil would not be touched. The plants seem to grow away from it very quickly, and about the 15th of July its attack is over. I have found it doing damage worth speaking of only in a few places. Some claim this to be the first year it has been in the country. The larvae stage of this insect is passed on weeds, therefore, the destruction of all weeds is of first importance. Spraying can never become general on so large an acreage, but if it should be practiced kerosene emulsion should be used, as the bean is easily destroyed by arsenical poisons. Bordeaux mixture is said to be very distasteful to the pest, and will prevent its attacks.

Stalk or Root Borer, (*Hydroecia.*) This insect belongs to a large class which attacks a variety of plants. The larva of the insect is deposited in the centre of the stalk and eats the stalk off just above the ground. It may eat only a hole out, or it may gnaw the stalk half-way around until the plant falls over. The work is all done from the inside, and the damage is done before there is any outward indication of the presence of the insect. For this reason the insect is very seldom seen. When the plant falls over the insect is gone. It passes into the ground, and there changes into the adult form, which is a meduim-sized greyish brown moth. The injuries from this insect have not been very great. It does not attack the plants until the pods are partly formed, and even those which are badly injured will generally continue to develop. The insect being in the stalk there is no remedy for it.

Fungous Diseases.

Anthracnose. This is perhaps the greatest enemy of the bean plant in Ontario. It appears on the leaves and stalks as reddish brown spots and continues to spread throughout the summer. When the pods are formed it attacks them in the same way. The round pits filled with pores on the pods are somewhat sunken, and often the pod is shrivelled and does not develop. The threads of the fungus goes through into the bean, and cause a black spot to appear? This fungus is commonly called rust by the farmers, but is altogether different. This disease is worse where the beans are planted two years in succession on the same land. It is also worse on poor soil. In the North of Oxford and Howard, there is a great deal of quick-sand, and on this soil I found the disease most prevalent. The fungus, not only injures the growing crop and lessens the yield, but in darkening the bean it lowers the price per bushel. For every pound of spotted or discolored beans, five cents a bushel is deducted from the market price. Thus it will be plainly seen that the importance of doing anything which will keep this disease in check. The spotted beans all contain spores of the disease and help to carry the disease over to another field. All seed beans, whether spotted or not, should be sprayed with formalin or immersed in blue-stone just before planting. Beans should not be planted on the same ground two years in succession, as the diseased leaves falling contaminate the ground with spores. The only method of destroying the fungus on the plant is to spray with Bordeaux, which is scarcely practical on a large area. Care should be taken to clean up, all of the crop and to destroy weeds and rubbish, because on such material, the spores pass the winter.

Rust. Although much talked about there is very little damage done by rust. Most of the so-called rust is anthracnose. However, there is a large portion of the crop which is more or less rusted some seasons, but nothing to cause serious damage.

Mildew. Along the lake shore where there is a heavy dew and the plants are kept moist a large part of the time, there are years when mildew will do some damage. The past season only a few fields were effected, and these to a very slight extent. It does not occur until the plants are well grown and does little injury.

For all insects and fungus diseases, clean cultivation and a good rotation of crops where beans will not follow beans is the very best preventive. Besides this, all weeds and rubbish which would afford shelter during the winter should be destroyed.

Varieties.

At one time practically all the beans grown in Ontario were "mediums" but now the Pea Bean has almost entirely displaced them. The great bulk of the beans grown to-day are pea beans. Of late years many new varieties have been introduced, each of which has its own particular market. I shall briefly describe each variety from the growers stand-point, and deal with their markets later.

Pea Beans. Pea Beans were introduced into Ontario from New York twenty-five years ago by Mr. E. G. Handy, son of the man who brought in the first beans. Before this time, "Mediums" were almost exclusively grown. The two bushels of Pea Beans which were introduced, produced over ninety five bushels the first year. This established their reputation as a yielder, but the farmers did not take to growing them extensively, as the market for them was small, and the price lower than for the mediums. Soon, however, their market extended, and they became higher in price than the others. It was not long after that until their culture spread over the whole territory. They are a small white bean, somewhat round in shape. The plant is not large, and stands fairly erect, holding the pods well off the ground. They will break through a heavy crust without any injury, and will withstand considerable wet while growing. As soon as harvested, however, they must be very carefully handled, as they are very easily spoiled. Pea beans are suited to any kind of soil that is rich and fairly well drained, and they will stand heavier soil than many of the other varieties. Another great advantage of them, is their earliness; they must be harvested in plenty of time to allow of wheat being sown.

Mediums. The medium bean is about one-half larger than the pea bean and much flatter, being more of a kidney shape. The whole plant is larger than that of a Pea Bean. It gives almost, if not equally as good a yield, and is in most respects quite as hardy. Its main fault is in being about two weeks later in maturing than the pea bean, which in many parts leaves it too late to sow wheat.

Marrowfats. These are a large white bean, much the shape of a pea bean and about three times as large. They are more adapted to loam and sandy soil than to clay. In clay, being a large bean they are apt to become broken off in coming through the ground. They have given very good yields where tried, and there average is increasing very much of late years.

Yellow Eyes. This is another variety of the Marrowfat bean. It is the shape of the white Marrowfat, and resembles it in every particular except color; the eye of the bean having a yellow blotch around it. There are two kinds, a large variety about the size of an ordinary white Marrowfat, and a small variety nearer the size of a medium bean. The small variety has given the better results where tried. The yellow eye beans have given satisfactory yields on sandy loam, but on havy soil, they have given very good results. They are only adapted to light, loose soil, and should not be sown where the soil is apt to bake. Like all large beans, they are difficult to thrash without breaking.

Red Kidneys. This is a large bean about three-quarters of an inch long and rather narrow. They are reddish brown in color, and somewhat kidney shaped. They weigh only 58 pounds to the bushel while other beans weigh about 64. These beans are somewhat flat and difficult to thrash. It is also hard to get them dried out and cured so they will keep without becoming musty. They will stand more rain than the pea-bean when pulled

without becoming discolored. They are very apt to revert to the original bean from which they were produced and give rise to a coarse, long vined bean of very inferior quality. Generally speaking, red kidneys have not given very good success.

White Kidneys. These beans have just lately been introduced. They are very similiar to the red kidneys except in color. As far as they have been tried they have given better results than the red variety, and may prove a profitable bean to grow.

Black Turtle Soup. This is a small glossy black bean, much the shape and size of a pea bean. They are quite hardy and do well on moist soils. They do best on strong soil even if it is somewhat heavy. They are a very short-strawed variety and on poor land they are difficult to handle. The bean is very oily, and they will withstand a great amount of exposure without any danger of spoiling. They have given about the highest yields of any variety. They are, however, a very late variety and in many parts wheat could not be sown after they were harvested. They should not be grown extensively, as their market is very limited and liable to be over stocked, if any large quantity of the variety is grown. They cannot be grown satisfactorily on the same farm with the pea beans, because of the danger of mixing the black and white beans. Both being the same size it is impossible to separate them by screening.

Other Varieties. Some of the other varieties have been grown but have given little success. The Red and the Green Flagelles, a French variety, have been tried. They have a very long, coarse vine, and are difficult to handle. Some are growing wax beans on contract for certain dealers. These are shipped to the United States to be sold as seed for green beans. The wax beans are poor yielders, and have a hard thick pod, adhering closely to the bean, which makes them very difficult to thrash.

Markets and Marketing.

When the beans are brought into the elevator they are run through a grader, and all rough dirt removed. From the cleaned beans a small sample of ten or fifteen pounds is taken, and hand picked; all dirt and bad beans are removed. Nothing but clean, unspotted, whole beans are allowed to pass. The refuse picked out is weighed, and for every pound of such material five cents a bushel is deducted from the market price. If beans are $1.40 a bushel and a sample picks four pounds to the bushel, the farmer will receive $1.20 for his beans. The sample must be of uniform size, and a clean, bright, ivory color. Size is of little importance, so long as the grain is well filled. The small beans are often worth more than the large ones. In the elevators the beans are usually cleaned again by machinery, and all the dirt and bad beans possible removed. Most of the beans for the Quebec, Ontario, and Western trade are sold in this condition as "prime beans." They are supposed to pick less than two pounds. The European and Maritime trades demand all hand-picked beans. All hand picking is done by women. They are arranged at a long table, and the beans are passed before them on canvas, while they pick out the dirt and bad beans. They are usually paid about three cents a pound for the dirt they pick out. A machine has been introduced in some of the elevators for this purpose. The beans pass over rollers, which draw the rough dirt and spoiled beans through, while the smooth coat of the good beans allows them to pass over. The great trouble with it is that it draws through too many good beans. When the beans contain much clay they are usually put through a machine, which

crushes the lumps, while a set of brushes rubs off the loose dust and polishes the beans. Beans for the Maritime market are all shipped in five-bushel barrels, while those for other markets go in sacks.

The principal market, and the one which takes at least three-quarters of the entire crop, and sometimes all of it, is the home Canadian market. Some years ago all the beans were used in the lumber and mining camps. They could be taken where potatoes could not, and were used as a substitute. Since the lumber camp trade has decreased, a new market has opened up in the cities. The use of beans by all classes of people is increasing rapidly. Clark & Co., of Montreal are among our largest canners of baked beans. The Western market, while yet in its infancy, is growing rapidly. The Maritime Provinces take a large amount of beans from Ontario, Halifax, St. John, and Sydney being the principal markets. Montreal and Ottawa are the largest markets in Quebec and Ontario. From these points the beans are shipped out to the camps. The Pea Bean is the only bean which is in demand in Canada, with the exception of a few car loads of Yellow Eyes, which are used in the Maritime Provinces. The Pea Bean has gained a very strong hold upon the Canadian market, and they are the only bean that can be sold to any extent. A few years ago there was a small class of the people in the Eastern Provinces demanded Yellow Eye beans. Some farmers grew them, and, the supply being limited, they sold for a high price. The next year too large a quantity was grown, and the price fell as low or lower than the pea beans. Last year, while most of them sold at as high a figure as the pea beans, yet if a much larger quntity had been grown there would have been no market for them at any price, after the people in the east were supplied. About 40,000 bushels were grown here last year, and that amount is very close to the limit to which they can be safely grown and sell at a paying price.

Of the foreign markets the French market is the largest. In the fiscal year 1905 we shipped to France 85,000 bushels, and in 1906 we shipped 49,798 bushels, in both years almost three times the amount shipped to any other country. These were almost all pea beans. The British market is also a large market, taking over 37,000 bushels in 1905 and 18,241 in 1906. The British market does not take a high-priced bean. A large quantity of cheap European beans are shipped in at a price at which we could not afford to sell. They demand a large bean, and will not take the pea beans, claiming them to be screenings. The Medium and Narrows suit them best. The British market is a large bean market, and one we should do more to waken up. A large quantity of beans are shipped to the British and French West Indies and Cuba. These beans are nearly all shipped out in bond by the United States. The Red Kidneys and Black Turtle Soup are nearly all used by the Spanish in these southern countries. The Red Kidneys are nearly all used in the West Indies. The Black Turtle Soup are used largely in Cuba for making certain fancy foods, and the demand for them is very limited. While the price is at present quoted at $3 a bushel, it would be impossible to sell a large quantity of them. About four or or five thousand bushels is near the limit of their consumption each year; above that quantity they cannot be sold at any price. The Red Kidneys have a larger market, but they have been grown extensively in Michigan; their market is apt to be overstocked at any time. Pea beans are also in demand in Cuba and the West Indies. The Marrowfat is used extensively in all of these countries. At present this bean has a large market and it is not widely grown. It is a high-flavored bean, and is much preferred in parts of the United States, the West Indies, and Great Britain.

At one time the United States took all our export beans, but of late

years the price of American beans has fallen, and the duty has been raised to 45 cents a bushel, so that it has almost shut us out of that market. The Boston market will take nothing but Pea Beans. The smallest Pea Beans have been screened out and sold in Boston as Vermont Pea Beans at $2.50 a bushel. Many of the Marrows and Kidneys go to New York.

The price of beans is very variable, but averages about $1.10 to $1.20 a bushel. Sometimes it has fallen as low as 30 cents and has gone up as high as $2. This is, of course, for pea beans. The other varieties are somewhat higher priced, depending upon their supply and demand. The price of beans is very unsteady, and may vary 25 to 50 cents a bushel within a week, without any apparent cause. This makes farmers afraid to grow the crop, lest at any time the price should fall, as it did a few years ago. The cause for the low price then, however, was an over-production and a loss of the American market by their raising the duty just at that time. Before then we had depended altogether on the United States market to take our surplus, and had no other foreign market upon which to fall back, as we have now. Our present market in Europe and other parts of the world, as well as our growing home trade, such a fall in the price is not likely to occur again. The fluctuation in the prices is largely caused by local dealers. To get a large portion of the available beans each dealer quotes the price as high as possible. This, of course, forces the other dealers to raise their price, and it often happens that prices are raised so high they are unable to sell at a profit. The commission men refuse to buy, or prefer to bring in low-priced foreign beans. When the wholesale trade is thus closed the object of the dealer is to buy no more beans, and consequently the price is lowered 15 or 25 cents a bushel, so that farmers will refuse to sell. When the market is falling the farmers, not knowing where it will stop, rush their beans on the market, while the commission man, hoping to get his supply at the lowest price, refuses to buy. This causes a great deal of confusion and unnecessary loss to both farmers and dealers. Until a more steady price can be maintained and the beans are kept from being rushed on to an already overstocked market, this condition of affairs cannot be remedied. A few local buyers have the regulating of the prices wholly in their own hands. Much of the beans are bought from the farmers and sold to the commission men by auction. The dealer who will pay the highest price to the farmers, and who will fill the orders of the commission men at the lowest figure, will do the largest trade. There is no set price throughout the district, as with other grains, and this close competition for business makes the price very uncertain. Another cause for this condition of affairs is the lack of reliable information regarding both the home and foreign crops. Many farmers and dealers, thinking to benefit themselves, withhold information regarding the condition of the crop and the probable yield, or even circulate false reports. Thus it is impossible to find out the amount of beans available in the country and to set the price accordingly at a point where the business can be carried on at a profit to both farmers and dealers. As it is at the present time, both parties are working against each other in the dark, to the disadvantage of both. So much hard feeling has been aroused against the dealers that the farmers have organized a company of their own to carry on the business. If the farmers and dealers had worked together and had not been afraid to give reliable information on the crop, the business could have been carried on much more satisfactorily to both. There is, besides, no information of any kind furnished on the foreign crop. The United States crop is the only one from which we get reliable reports. Our prices here are greatly influenced by the crop in many of the European countries, and of these we have no information whatever.

There is a great variety of opinion held among dealers and farmers regarding the possibilities of extending the bean industry. At present the acreage is tending to increase slightly, and bean growing is extending over a larger territory each year. While it is increasing considerably in Elgin and Middlesex, the decrease in the west and north will be nearly enough to counteract it. There will be more danger of overstocking the market by an excessive yield than by an increased acreage. Some believe the extension of the acreage will be so great as to destroy the present industry, but as far as can be seen at present, there are no grounds for such opinion. If we have a small crop, such as in 1905, the home market will take all, and prices will remain quite high, but if the crop be so large that we are forced to look for a foreign market, then the price of beans must be brought down to the foreign market basis, which is usually somewhat lower than the Canadian price. However, prices on the foreign market seldom fall below a dollar a bushel, and it seems almost incredible that a slight increase in the small bean area of Ontario should have much influence on the world's market. The general opinion of farmers is that beans will be grown extensively at a dollar a bushel, but below that they are not a very paying crop. Some believe that if they drop below a dollar they will still be grown, but will be used for hog food, for which purpose they are very highly prized. This turn of affairs, however, is very undesirable, because of the detrimental effect beans have upon the quality of the bacon.

Anything which can be done to increase the Canadian market is of greatest importance. In Canada we are not brought into competition with other countries, and can always maintain a steady paying price. The influx of settlers into the west is increasing the market in that section. At present we are shipping about 50,000 bushels of beans to the west each year, and they are also getting from 10,000 to 20,000 bushels from the United States. The quality of beans used in the west is very poor, and they command a low price. Few beans are shipped from here to British Columbia. The short water route from California enables the Americans to land beans in Vancouver over a 15c duty much cheaper than we could ship them from here. Consequently, with our excessive freight rates, that market is placed beyond our reach. The California beans are of a very poor grade, and sell at a low price. Many are in favor of raising the duty, which at present is only 15c a bushel, as against 45c going into the United States. But even if it were raised to 45c, it would not place us on an equal footing with the American in British Columbia, as our freight rates to many parts of that province are as high as $1 a hundredweight. This would only mean raising the price to the consumer in British Columbia without helping the producer in Ontario. However, the amount of beans imported from the United States has increased from 14,538 bushels in 1905 to 24,003 bushels in 1906, and if such increase continues a higher duty may become an absolute necessity to protect the Ontario grower. The quality of beans as a food is becoming more fully recognized, and the consumption in our cities and towns is rapidly increasing. With this increased demand in our cities and through the west our Canadian trade will increase in proportion. Nearly all of Elgin County, and, in fact, most of the district mapped out, is well adapted to beans, but the encouragement of bean growing over this area at present would not be advisable.

One of the greatest drawbacks to the industry is the excessive freight rates. At present there is a discrimination against beans which places them at about twice the rate of other grains. The rate on beans to Montreal is 19½c a hundredweight, while on wheat it is only 13½c for home consumption

and 9c for export. To St. John the rate is 25½c, to Calgary 79c, and to many parts of British Columbia $1. When we have to compete against other countries these excessive rates place us at a great disadvantage. Besides, the western market is placed almost beyond our reach. There is no reason whatever why beans should be higher than other grains. It is claimed by the railway companies that because of the extra value of the beans over other grains the freight rate must be higher to meet the danger of loss by wrecking. Their tariff, however, is not in proportion to this extra value. Beans will not average over $1 a bushel, while wheat will sell at about 80c. The freight rates are about as 19c to 10c. Beans are all shipped in barrels and sacks, while wheat is shipped in loose bulk, thus increasing the loss from a wreck less in case of the beans than with other grains. Even flour, which has a much higher value than beans, is shipped the same way, and goes out at a much lower rate. With the great number of empty cars going to the west there is no reason why a cheaper rate could not be given to western points. This is the greatest grievance in the bean business to-day, from both farmers and dealers. When the demand is not bright, and prices fall to near a dollar a bushel, the business is often at a standstill because of the high freight rates.

Summary and Conclusions.

After reviewing the whole situation, I find there are a few matters in connection with the agricultural side of the business requiring special mention. The necessity of thorough drainage, proper preparation of the soil, and clean cultivation during the summer cannot receive too much attention. I find also great room for improvement in the seed used. Little or no improvement has been done on pea beans since they were first introduced. As a result, they have become mixed with mediums and other varieties, and many of the samples grown are very uneven in size. The beans are not yielding so well as they did some years ago, and the quality of the seed used is partly the cause. Many farmers buy their seed from the elevators, and often take very inferior seed becausse it is cheap.

While pea beans are demanded by the Canadian market, yet there are many other varieties of small beans which would pass as pea beans, there being, as far as I can learn, no distinct variety difference between pea beans and some other small beans. I would strongly recommend the White Wonder, a small bean, which has given the highest results at the Experimental Farm. It is a small white bean, and resembles the ordinary pea bean in appearance of grain and character of growth, and is a very prolific yielder.

Many are opposed to growing anything but pea beans, but, if, judgment be used, there is a place for several others of the so-called special varieties. If but one variety pea beans be grown we are in danger of overstocking that market to which they are sent. But if one-quarter of the acreage be devoted to other varieties, as Yellow Eyes or Marrowfats, etc., a new market is opened up, and these special varieties do not compete with the pea beans, but are put into markets where we could not put the latter. Thus the danger of overstocking the regular market is greatly lessened. However, there are certain of the special varieties which have very limited markets, and should be grown sparingly. The price quoted is no guide as to the demand, as one man may hold all the beans which are available of that particular variety, and he is thus able to hold the price at two or three dollars a bushel, while it would be absolutely impossible to sell a bushel of that variety. At the present time a variety which is quite safe to grow is the White Marrowfat.

It has a large market and is a satisfactory grower. The Red Kidney has also a large market, but the large production in Michigan makes it more uncertain. It is also not a satisfactory bean to grow in Ontario. The Yellow Eyes have a market up to about 40,000 bushels, but over that amount there is apt to be little or no demand. Black Turtle soup have a market for about 4,000 to 5,000 bushels, and farmers must be very careful in going into them strongly. For other varieties the grower must be well posted on the market and other conditions before attempting them. The fact that beans of any variety are a high price in the spring often causes more to be grown that season than there is a market for. To be successful with these varieties a careful study must be made of the varieties, and a variety sown only on soil to which it is adapted. It is always safer to plant the special varieties to the extent of about one-half the crop, and pea beans for the other half.

In some parts, where beans have been grown for years on light soil, the yields are getting smaller each year. If this special crop is to be continued, some form of fertilizer will have to be used. I should like to see some experimental work carried on to find the best fertilizer for such a purpose. Some farmers have been using ashes on bean land, and have received very favorable results.

In the commercial side of the industry what is most needed is lower freight rates, more reliable information regarding home and foreign crops, and a more complete hold upon the western market. Much could also be done toward opening up a better market in Great Britain, the West Indies, and Cuba. If these markets could be opened up there would be no danger from an over production. There is a large district on which beans could be grown successfully, but until a larger market opens up it would not be well to encourage it.

The experimental work which is now being carried on with beans is not doing the good it should. While the crop is well handled, and every care possible is taken of it, the climate is altogether too backward at Guelph for success with beans. I have made enquiries through the bean district of ex-students and friends of the institution as to the value they derived from the bean experiments at the Ontario Experimental Farm. They all claimed they were of no use to them, and many asked that experiments be carried on inside the bean district. The season at Guelph is too slow for beans, and they do not mature properly or give a good sample.

TOBACCO.

By. Prof. J. B. Reynolds, O.A.C., Guelph.

The object of the investigation here reported upon was to discover, so far as mere inquiry can discover, the probability of success that would attend the growing of the finer grades of tobacco in Ontario. There are several varieties of tobacco, each variety producing, at its best, leaves for the manufacture of a certain grade of cigar, smoking, or chewing tobacco. Along with the variety must be considered two other controlling factors; climate and soil. Apparently there are required certain conditions of temperature and humidity for the proper growing, ripening, and curing of tobacco; also there seem to be required certain conditions of soil for the production of the finer grade of leaf for cigar manufacture.

The varieties of tobacco that are grown in latitudes and climate similar to that of Southern Ontario, are: first, the cigar types; second, the manufacturing types, as they are called, for smoking and chewing; third, the bright yellow types, for cigarettes, for smoking, and plug wrappers; fourth, the White Burley, principally for the manufacture of chewing tobacco.

The cigar types are at present grown principally in Connecticut, Pennsylvania, Ohio, and Wisconsin. In Connecticut the specialty is the wrapper leaf, that is, the outside leaf used in wrapping the cigar. Wisconsin is known as the "Binder" State; that is, it produces a special binder leaf, used as an inside cover next to the filler. Ohio produces a large proportion of filler tobacco. The manufacturing types are produced in a number of the states of middle latitude, from Virginia westward to Arkansas. The bright yellow type is generally confined to Virginia and North Carolina. The White Burley is produced in Ohio, but in very large quantities in Kentucky. This latter is the principal variety grown in Southern Ontario.

Fig. 1. Tobacco Field and Curing Sheds on the Farm of Walker Bros., Walkerville Junction.

Tobacco growing in Ontario is almost altogether limited to the southwestern counties of the Province, Kent and Essex. From the town of Blenheim westward through Leamington, and along the water front to Windsor, following the narrow belt within the immediate climatic influence of the water, is the tobacco district of Ontario. Isolated areas here and there are of relatively insignificant consequence as compared with this main belt. Here, as was said above, the principal variety grown is the White Burley, and it is used almost altogether for the manufacture of chewing tobacco. Some years ago the Empire Tobacco Co., by extensive advertising, and by promises of a ready, profitable sale, induced the farmers in this southwestern district to commence the growing of tobacco of the White Burley type. It is estimated that this year there are at least 10,000 acres of tobacco within the limits above mentioned.

Besides the White Burley, the other varieties have been experimented upon. The Erie Tobacco Co. of Windsor, have this year commenced an experiment in the growing of the bright tobacco of Virginia for the manufacture of smoking tobacco. The Walker Co., of Walkerville, have a very large plantation, principally of the seed leaf, for the manufacture of chewing and smoking tobacco. Besides these, there are a number of varieties grown here and there, but all are of little consequence in area. This inquiry has been directed toward the influence of climate and soil upon the types and qualities of tobacco that may be grown.

It should be stated in this connection that, after all possible comparisons have been made in respect to climatic and soil influences, the only final test is that of experience. The susceptibility of the tobacco plant to physical conditions seems to evade analysis. There are differences in results where no differences can be detected in any climatic or soil condition by meterological instruments or apparatus for analysis. The most that can be done, therefore, in this connection is to note the probability of success by comparing physical conditions.

The Influence of Climate on Tobacco.

Of the various climatic factors that influence the growing of tobacco, the following seem to be the most important:

1. *The Rainfall during the Growing Season.* Tobacco is a plant that requires large quantities of moisture for its fullest development. It is a large, rapidly growing and succulent plant, and during its period of growth it draws heavily upon the moisture content of the soil. It is susceptible to extreme drought. When the moisture in the soil has become depleted excessively, the plant ceases growing, commences to ripen, and fails to attain the quality of leaf which it would have done under favorable conditions of moisture. On the other hand, it is equally susceptible to excessive soil moisture. Low wet places in a tobacco field can be immediately detected by the yellowing of the leaves. In this respect it is quite as susceptible as the corn plant. Further, the most valued varieties of tobacco do not grow on the heavier types of soil which contain the larger supplies of moisture.

Mean Monthly Precipitation.

——	April.	May.	June.	July.	Aug.	Sept.	Total for six months.	Latitude.
	in.	in.	in.	in.	in.	in.	in.	deg.
Connecticut Valley	3.33	3.78	3.79	4.90	4.86	3.85	24.51	41.45
Beloit, Wisconsin..	3.30	3.88	3 80	3.55	2.86	3.60	20.99	42.30
Pelee Island	3.09	3.68	3.05	3.38	2 06	1.98	17.24	41.50
Windsor	1.88	2.98	3.42	3.16	2.51	2.14	16.09	42.20

The above figures show the mean rainfall by months from April to September, which period completely includes the growing season. The four points compared are the Connecticut Valley, in which district a high grade of cigar wrapper leaf is produced, as well as binders and fillers; second, Beloit, Wisconsin, which is about the centre of one of the tobacco districts in Wisconsin. Here a high grade of binder leaf is produced, as well as some wrappers and fillers. Pelee Island, the most southerly point

in Ontario and in Canada, and Windsor, chosen to represent the Walkerville district, and approximately the whole of the tobacco district following the lake shore from Windsor to Blenheim. Of these four points, the rainfall in the Connecticut Valley is about 24.5 inches for the six months; in Beloit, Wisconsin, it is 21 inches; in Pelee Island a little over 17 inches, and at Windsor about 16 inches. In these respects the Connecticut Valley and the Wisconsin district would likely produce a heavier yield per acre, other conditions being equal, than the Windsor district. The rainfall at Windsor, however, is sufficiently uniform in distribution to maintain a continuous growth. Such has been the experience in tobacco growing there; and this year, though it has been unusually dry, is no exception to the average experience, except in instances of late planting.

2. *The Mean Monthly Temperature.* The principal varieties of tobacco appear to be of southern origin and of tropical or semi-tropical habits of growth. Tobacco generally requires a warm soil for germination and a warm soil and air for growth. It is tender, and easily injured by temperatures below the freezing point. This is true at both ends of the season; and, therefore, the tobacco plant has to be grown in the field well within the period that is free of frosts; and, besides, this period must have relatively high degrees of temperature to insure the ripening of the plant.

The following are the mean monthly temperatures from April to September, inclusive, for the four points above mentioned:

Mean Monthly Temperature.

	April.	May.	June.	July.	Aug.	Sept.	Mean six months.
	deg.	deg.	deg.	deg.	deg.	deg.	deg.
Connecticut Valley	44.8	56.5	65.9	70.2	67.7	61.1	61.0
Beloit, Wisconsin	48.0	57.8	69.0	73.3	70.6	62.4	63.5
Pelee Island	44.1	57.2	68.3	74.4	73.2	65.2	63.7
Windsor	45.7	58.2	67.4	72.7	70.0	62.6	62.8

With respect to the above temperatures, it is interesting to note that the Connecticut Valley and Pelee Island are on almost the same latitude, and that Beloit, Wisconsin, and Windsor are within ten miles of latitude of one another. The temperatures at Pelee Island are slightly higher, especially during July, August, and September than are those in the Connecticut Valley. This is due, undoubtedly, to the more inland situation of Pelee Island and to the influence of the ocean in moderating the summer temperatures of the Connecticut Valley. Comparing Beloit and Windsor, we see that the former has slightly higher temperatures in June and July, with a difference in the average of six months of only .7 degree F. So far as these figures can be taken as a guide, either Pelee Island or Windsor should furnish equally favorable conditions of temperature with Wisconsin or the Connecticut Valley. Pelee Island particularly seems to have the required conditions of temperature for producing the type of tobacco that has made the Connecticut Valley famous.

3. *Mean daily range of temperature.* The mean daily range of temperatures for a given point, are obtained generally by taking the average difference between the highest, or maximum, temperature of the day and the

lowest, or minimum, temperature of the night for the same twenty-four hours. It is obvious that where high day temperatures occur, they may occur alternately with low night temperatures, producing a relatively high mean temperature but occurring along with occasional frosts. This climatic factor is expressed by the term "daily range of temperature." Arithmetically, the daily range is determined by subtracting the minimum from the maximum. A high daily range is characteristic of inland conditions distant from the tempering influences of water. A high daily range is synonymous with late spring frosts, even when the mean temperature has attained a high degree. A low daily range means warm nights and immunity from frosts. I have been unable to secure a statement of the daily range of temperatures for Beloit, Wisconsin, but submit the following figures for the other three points:

MEAN DAILY RANGE.

—	April.	May.	June.	July.	Aug.	Sept.
	deg.	deg.	deg.	deg.	deg.	deg.
Connecticut Valley	21.3	22.5	22.1	21.6	20.1	20.4
Beloit, Wisconsin	....	....	....	....	....	....
Pelee Island	7.2	7.9	7.6	7.7	7.5	8.1
Windsor	16.7	19.5	18.6	18.8	18.9	16.4

A comparison of these figures demonstrates the relative fitness of the Southern Ontario districts for tobacco growing in their comparative immunity from frosts during the growing season. In this respect both points are superior to the Connecticut Valley, a state of things which I cannot entirely explain. It is well known that low lying fields have greater daily ranges of temperature than upland districts or mountain sides. The high daily range in the Connecticut Valley may be due to its low altitude, producing intense heat during the day, and by air drainage from the surrounding uplands, producing comparatively low temperatures during the night. Windsor, being situated immediately on the River Detroit and the surrounding country affording air drainage to that river, the daily range of temperature is low. Pelee Island, being a small tract of land in the midst of a comparatively large body of water shows a remarkably low daily range.

There is a fourth factor of climate of the highest importance in tobacco growing, and that is the relative humidity of the atmosphere. This is of importance both in the maturing of the plant, and in the curing of it. It is so important in the curing that it compels a difference of one month in the dates of planting and of harvesting between the Connecticut Valley and Wisconsin. It is somewhat difficult to secure exact figures giving the measure of the relative humidity at any point. It is not altogether expressed by the amount of precipitation. Two points having the same precipitation may vary widely in the average humidity of the atmosphere. One point may have frequent light rains, much fog, and a high percentage of cloudiness, all of which conditions are conducive to high humidity. Another point with the same average rainfall may have heavy, infrequent showers with little fog and a high percentage of sunshine. Generally

speaking, the former state of affairs belongs to water fronts and maritime districts, while the latter series of conditions belongs to inland districts. In relative humidity, therefore, it may be estimated that of the four points chosen the Connecticut Valley stands highest, Pelee Island second, Windsor third, and Beloit fourth. Here again, though the influence of this factor is very marked, yet the difference between two points can be determined only by experiments. The general indications, however, are that the practices in Southern Ontario, so far as they will be governed by the humidity of the atmosphere, would be somewhat midway between the Connecticut Valley and Wisconsin, inclining more nearly to that of Wisconsin. I find this to be the case in the matter of the date of harvesting.

FIG. 2. Showing a field of "White Burley," grown in Essex Co., Ont.

These climatic factors have each their separate influence on the tobacco industry. It might not be difficult to determine the influence of each factor by itself, provided the influences of the others could be eliminated, but since this is impossible, the actual effect of the combined differences cannot be predicted with any degree of certainty. The most that can be said in this connection is that the climatic conditions in Southern Ontario along the water front from Windsor to Blenheim and in the Niagara and Grimsby districts appear highly favorable to the producing of a cigar leaf equal at least to that produced in Wisconsin, and there is strong probability that immediately along the water front a good type of cigar wrapper can be produced by growing the Connecticut Broad Leaf.

The Influence of Soil on Tobacco.

The influence of soil on the quality and yield of tobacco may be considered under two heads: first, the chemical influence or the influence of the degree of fertility, the amounts and proportions of plant food distributed in the soil; secondly, the physical influence, depending upon the texture of the soil, that is to say, the proportion of sand, silt and clay, making up the mineral constituents. "Under given climatic conditions the class and type of tobacco depend upon the character of the soil, especially on the physical character of the soil upon which it is grown," (Whitney, "Tobacco Soils of the United States .") Of course, tobacco can be grown like any other crop on almost any soil, but if a certain particular quality of leaf is desired, then the soil must be carefully selected as suited to the development of that leaf. As a general rule, the heavier types of tobacco are produced on the heavier soils, while the finer grades are almost without exception found growing on sandy or sandy loam soils. The texture and physical properties of the soil more than any other soil factor control the distribution of the distinct types of tobacco.

While the physical character of the soil exerts a most important influence on the type and quality of tobacco grown on it, the fertility of the soil has a most marked influence on the quantity of the yield. Provided the soil is in normal condition, not excessively depleted of fertility and able to produce healthy plants, then manures and fertilizers added to it increase the yield without influencing to any marked degree the quality of the leaf. The exception to this occurs when an excess of nitrogen is found in the soil, producing a thick, heavy, gummy leaf. The tobacco plant draws heavily upon potash, and both manures and fertilizers which are added to the soil should contain a large proportion of this constituent. Besides this, of course, cultivation will improve both the quality and the yield of the crop, but no amount of cultivation and no amount of manuring and fertilizing, however, well timed and intelligently applied, will produce a fine silky leaf on a heavy type of soil. I found no exception to this rule during my visit to Connecticut, Wisconsin, and Southern Ontario, and the same rule is stated in publications dealing with tobacco growing of the United States Department of Agriculture. The type of soil, therefore, suited to the finer grade of leaf, such as can be used for cigar binders or wrappers or plug wrappers, is a sandy loam, sufficiently supplied with humus, and having below it a deep sandy stratum affording good drainage and yet close enough to retain large supplies of moisture. Good drainage is essential, and the soil which does not provide it naturally must, in order to produce any crop of tobacco with success, be thoroughly underdrained. Generally speaking, the soil which has below it a subsoil affording good natural drainage is better for the finer grades of tobacco.

The Tobacco Soils of Connecticut, Wisconsin, and Ontario.

Below is given a report of the mechanical analysis of three soils from Connecticut, three from Wisconsin and two from Ontario. The Connecticut soils were gathered from one farm, and that one of the best in Connecticut where tobacco had been grown almost continuously for thirty years. The Wisconsin soils were taken from the neighborhood of Janesville, Wisconsin, and represented pretty well the tobacco soils of that dis-

trict. The Ontario soils were taken, one from Leamington,—this one being, so far as I can judge, an average sample of tobacco soil in that district; the other from Walkerville, from the farm of Walker Bros.

		Gravel	Sand	Silt	Clay
Connecticut	1	2.8	76	18	6
"	2	9.4	69	24	7
"	3	2.2	63	27	10
Wisconsin	1	0.0	17	70	13
"	2	0.7	55	25	20
"	3	0.0	11	75	14
Leamington, Ont.,	1	1.7	81	11	8
Walkerville, Ont.,	2	2.9	45	32	24

The analysis of the Connecticut soils shows, first of all, that they are of a sandy type. Within this type they vary, as may be observed, as much as 13 per cent. in sand content and as much as 9 per cent. in silt content. The first of these soils is regarded as the lightest type on the farm from which the samples were taken, and so the report shows. The foreman of the farm was unable to distinguish any difference in the physical character of No. 2 and No. 3. They seem to cultivate in about the same way, but No. 2 gave rather a slow growth of tobacco, while No. 3 started the crop more quickly and matured it somewhat earlier. I am not sure that the physical differences, as shown by the analysis, are sufficient to account for this difference in action. No. 3, the quicker soil, has a larger percentage of clay, which certainly does not account for the stated difference in action. It has a much smaller proportion of sand, and a much smaller proportion of gravel. Whether the gravel in No. 2 has any effect in the direction indicated or not, it is hard to say. Evidently these two soils exhibit the extreme sensitiveness of the tobacco crop to physical conditions. There is a marked difference in action, but the physical differences shown by the analysis seem scarcely sufficient to account for the results.

These soils are producing year after year the finest grade of wrapper leaf. They may be taken, therefore, so far as soil is concerned, as the requisite condition for production of a leaf of that type.

Coming now to the Wisconsin soils, we note that they are decidedly heavier throughout than the Connecticut soils. The average clay content of the Connecticut soils is a little less than 8 per cent.; the average clay content of the Wisconsin soils is a little less than 16 per cent. The Wisconsin soils also are practically free from gravel. The types of tobacco grown in Wisconsin, as has already been pointed out, are principally those producing a binder leaf, requiring strength, elasticity, and fineness of texture. No. 2 soil of this group is new land, and this year is producing its first crop, and that of tobacco. The leaf which I examined, in company with an expert, was a thin gummy leaf of fine texture, highly suitable for a binder leaf. It is a question with regard to these soils if they can produce, even if climatic conditions were favorable, the same grade of leaf that the Connecticut soils produce.

We come now to the two Ontario soils. The Leamington soil has 8 per cent. of clay, which is the average per cent. of the three Connecticut soils. It differs, however, from the Connecticut soils in having a generally coarser texture. The Connecticut soils average 69 per cent. of sand,

while the Leamington soil has 81 per cent. of sand. The gravel content of the Leamington soil, is, on the other hand, less than that of the Connecticut soils. On the whole, this soil in physical character compares very favorably with the wrapper type of soil of Connecticut. The Walkerville soil, on the other hand, is the heaviest of all types examined. This fact is quite evident upon a cursory examination of the soil in the field. It is a markedly heavy soil, and I believe that no attempt is being made to grow the finer grades of leaf upon this farm. Principally a leaf for the manufacture of chewing tobacco is produced here.

FIG. 3—Showing a field of "Ohio Seed Leaf" grown in Essex County, Ont., with an immense re-drying plant in the background.

TOBACCO GROWING IN CONNECTICUT.

The best farm that I visited is situated about eight miles from the city of Hartford, Conn., at Buckland. It belongs to Messrs. Hartman, of Hartford, tobacco growers and packers. It consists of a little more than 65 acres, and 65 acres of tobacco are growing this year.

The soil is a sandy loam with evidently three slightly differing grades. The sensitiveness of the tobacco plant to slightly varying conditions is seen by noting the slight differences in these soils and the marked difference in growth of the tobacco. Tobacco is grown continuously on the same soil without rotation. It is fertilized by horse manure, brought from New

York. This horse manure is supplemented by the application of commercial fertilizers, one of which is cotton seed meal. Another fertilizer used is the following:

5.50 to 6.50 per cent. Ammonia.
3.00 to 4.00 per cent. Phosphoric acid available.
5.50 to 6.50 per cent. Actual potash.

Sowing Seed. The seed is sown in hot beds about April 1st. These hot beds are ordinary frames sloping to the south, covered with glass and provided with hot water pipes. Before sowing, the seed is soaked in vegetable mould of some sort, preferably apple tree mould, containing rotten pulp from old apple trees. One teaspoonful of seed is sufficient for a square rod of ground. In mixing the seed and the pulp, five tablespoons are put with a pail of the pulp. This is kept hot in the boiler house for about five days allowing the seed to sprout in the pulp, then it is sown. In fertilizing these beds, cotton seed meal is applied in the fall, 100 pounds to 325 square feet; then a cover of four inches of horse manure is applied on top and in the spring this is raked off.

Planting. Planting is begun about May 15th. The plants are set by machinery. The planting machine consists of a large barrel suspended between two wheels, the barrel furnishing water for moistening the soil. Behind the barrel runs a plow point, which cuts a small furrow in which the plants are to be laid. On each side of this plow point, and slightly behind, is a seat, so that the machine carries two men for planting. These men lay the plants alternately in the furrow as the machine moves along. Behind the plow point and attached to the same beam are two blades, slightly tilted and set about three inches apart. The blades draw the earth in close to the plants and pack it, so that the plant is completely set out when the machine has passed over. The machine requires three men and a team to operate it, and with this outfit three and a half acres a day can be planted. There are different forms. One of the best is made by the Bemis Co., Springfield, Mass., cost, sixty dollars. The early planting, resulting in early maturity, is found to be best in Connecticut, as a rule, because the leaf should be cured there in warm weather at high temperature for best results.

Cultivation. In the autumn manure is applied and the land is plowed shallow, so that the manure may be covered. In the spring it is plowed again, a little deeper, then one application of fertilizer is put on broadcast, then the Acme harrow is used to pulverize the soil and mix the fertilizer with it. Then the leveller is used, the chief part of which consists of planks for levelling and pulverizing; then the land is ready for planting. In summer cultivation, while the plants are still small, the small shoe cultivator is used. Later the cultivator with the broad shares is used, and last of all, in July a special form of cultivator, called the Prout hoe (manufactured by Olds and Whipple, Hartford).

Harvesting and Curing. Harvesting commences about August 1st. By means of arrow points fitted over laths, the plants are run upon the laths, and are suspended by supporting the laths across scantling in the shed. Successive tiers of plants are thus suspended until the shed is filled from roof to floor.

Great care is required in the curing of tobacco in the shed. The commonest form of destruction in Connecticut is that called Pole Sweat, or rot in the shed, caused by damp weather or want of ventilation.

Selecting Seed. As the flower buds appear the tops are cut off and plants are kept topped, topping the larger ones so as to keep them as nearly

even as possible in growth and maturity. Harvesting generally commences two weeks after the last topping. For seed the best plants in the field are selected and the buds left. These plants are left untouched in harvesting and the seed collected separately. Seed plants are usually ripe about October 1st.

Tobacco under Cover. This year there is on the farm one-half acre of tobacco under a cheese cloth cover as an experiment. The plants here are much more even in size, are farther advanced than those in the open field, also the leaves are sounder on account of freedom from wind and heavy rain. It remains to be seen if the increased value of the crop, resulting from more uniform growth, immunity from frost, and other weather damage, will repay the cost of cover.

Fig. 4. Curing shed for tobacco.

The Connecticut Wrapper. The variety of tobacco grown in Connecticut is generally the Connecticut Broad Leaf. Connecticut tobacco is especially known as the wrapper type, that is, it furnishes a leaf specially suited for the outside wrapper of cigars. The form of leaf that is most desired for the Connecticut wrapper has a rounded end. I noticed here and there over the field plants of a peculiar spotted appearance. Upon inquiry I found that this is a disease whose origin and cure are unknown. It is called the calico or mongrel plant. This calico plant is smaller than the normal ones, and frequently the calico spotting may change to rust, which destroys the plant entirely. At best the leaf may grow into the binder type.

Each plant may produce leaves, first, for wrappers; or, second, for seconds, or binders; or third, the top leaves for cheap fillers. The first two, wrappers and binders bring from eighteen to thirty cents per pound, the fillers about five cents a pound. The average crop is 1,800 pounds per acre, 30 per cent. of which may be wrappers.

Tobacco Growing in Wisconsin.

The specialty produced in Wisconsin is known as the binder leaf, and this leaf is used by Canadian manufacturers and others in the manufacture of a high grade cigar. The chief variety grown in Wisconsin producing this leaf is known as Comstock's Spanish. In the many plots that I saw in the neighborhood of Janesville, Wis., this Spanish leaf predominated. There were, besides, the Connecticut Broad Leaf, Old Spence Seed, the Silver Leaf, (which produces a very broad leaf), the Narrow Leaf Spanish, and one or two other miscellaneous varieties.

There was a marked difference in the shape of these leaves. The proper leaf for the binder variety, as well as for furnishing some wrappers, is a broad, round tipped leaf. Many of the leaves, however, as for instance, the Narrow Leaf Spanish were distinctly narrow in shape and sharp at the point. Besides the shape, the texture is, of course, an important property in the manufacture of binders. A fine, silky, elastic texture is the desired quality. The best leaf that I saw growing in Wisconsin fields was the Comstock Spanish on a piece of new land. For some reason, not clearly known, new land produces a finer quality of leaf than land that has been in cultivation for some time. Consequently, it is found advisable either to follow a rotation of crops, or, at least, to plant tobacco for three years in succession, and then to change the ground and plant other crops for a year or two, so as to renew the elements in the soil on which the tobacco has existed.

The soils used in Wisconsin for growing tobacco are all distinctly of the sandy type. There is, of course, a marked variation in the amount of vegetable matter present in the soil, but the mineral foundation should not verge on the clay type. A sandy loam, containing a large proportion of black vegetable matter, such as would be present in a virgin prairie soil, is found to be the ideal condition for tobacco in Wisconsin.

A marked difference between the practice of Wisconsin and that of Connecticut is in the dates of seeding and harvesting. It is found that to harvest early in August in Wisconsin is likely to produce a dry, withered leaf in the curing, while in Connecticut it is found desirable to harvest as early as possible in order to take advantage of some of the heat of the summer for curing. This difference in result is likely due to difference in climatic conditions. The moist marine atmosphere of Connecticut prevents excessive drying in curing, and necessitates a fairly high temperature to prevent what is called "pole sweat" in the shed. Whereas in Wisconsin the inland conditions, inducing a drier atmosphere, make cool weather more favorable to curing. I believe that the practice in southern Ontario leans toward that of Wisconsin in this particular rather than toward that of Connecticut.

In Wisconsin the seed is sprouted in fine wood mould, sifted. First warm water at about 70° F. is poured on the seed, which is soaked for one-half day, and then mixed with mould. This is kept damp and the seed sprouts in about three days, when it is sown in the beds. After scattering the seed on the beds, the surface of the beds is packed firmly, and then soaked with water and covered with one-quarter of an inch of sand. Usually the plants will show through the sand in four days. The sowing of the seed usually takes place about the 10th of April, and when the stems are about three inches in length the plants are ready for machine planting. Planting is done as near the 15th June as possible, and harvesting from the 15th August to the 1st September. The same sort of machine is used in

Wisconsin as in Connecticut, and it is found that the machine planting is more even in its results and more sure on account of the watering, which is part of the process, than hand planting.

In cultivating for tobacco the approved practice in Wisconsin is to plow in the early fall, top dress with manure, and plow again lightly in the spring, then harrow to form the seed bed. After planting, cultivation is carried on much as in Connecticut. I observed one instance of the bad effects of too late cultivation. When the root system of the tobacco is extended broadly between the rows, it is unwise to cultivate, or, if it is absolutely necessary to cultivate, then it should be done as shallow and as narrow as possible, in order to avoid pruning the roots.

In Wisconsin early curing, as has been stated, results in excessive drying of leaf. Where the crop is ripe and harvested in hot weather, excessive drying may be prevented by throwing water on the ground in the shed. The shed is closed in the day and opened up at night.

Varieties of Tobacco.

White Burley. The White Burley is at present, and will likely continue to be, the principal variety of tobacco grown in Ontario. Its fitness for Ontario conditions seems to have been thoroughly demonstrated, and a profitable market is afforded for this variety by the Empire Tobacco Co. This crop is found growing in greatest abundance, outside of Ontario, in Kentucky. It is, of course, a low grade variety, and is used entirely, I believe, in the manufacture of chewing tobacco; but it is a heavy yielder and works in well in rotation with other crops which are grown in Southern Ontario. Unlike some other varieties, it cannot be grown profitably without rotation; the usual practice is to use the White Burley tobacco in the ordinary rotation.

The following estimate of the profit of this crop was furnished me by the Empire Tobacco Co.: Average yield per acre 1,300 pounds of cured, stripped tobacco; average price nine and a quarter cents per pound. The gross revenue from this would, therefore, be $120: the cost of growing and curing is estimated at $45, giving net profit of $75 per acre. It may be asked, if the profit per acre is so high as this, why is it not grown even more extensively? In reply to this, I may say that, in the first place, much more than average skill and care are required in the growing of the crop. The plants are difficult to propagate and difficult to start in the field. The land has to be in first-class condition, in quality and tilth for seed bed, and the cultivation has to be carried on systematically throughout the growing season. After this, the curing is a costly and hazardous process. In the second place, this average yield has been attained in a comparatively narrow district, within three or four miles, at the most, of the lake shore. The growing of tobacco outside of the immediate influence of the water would be more hazardous and likely less profitable.

White Burley is cured after the usual fashion of air curing. A typical shed is 36x100 feet. This will contain ten acres of tobacco. Every fifth board, or thereabouts, on the siding of the shed is hinged so as to swing outward and allow a free movement of air through the shed. The interior is furnished with posts and scantling for the support of the tobacco. In the field the tobacco plants are run on a lath by means of a sharp arrow-shaped steel needle, fastened on the end of the lath. This needle pierces the stalk of the plant and the lath is run through the stalk and in this way the lath is filled with as many plants as can be strung upon it. These

bunches are then hauled to the shed and hung between scantling, the projecting ends of the lath being supported by scantling. The different tiers from top to bottom of the shed are put in until the whole shed is filled. The tobacco is then left there to air-dry until the snap has been removed in the right quantity and the leaf is in proper condition for stripping and bulking into "hands." The length of time required for this curing depends of course, upon the character of the season, upon the temperature and humidity of the air during the time of curing. A great deal of tobacco is spoiled either by drying too rapidly and "haying out," as it is called, or by standing too long with the green sap in and "pole sweating." After the tobacco is cured, the leaves are stripped from the stalk and it is then in condition for handing over to the manufacturer. Tobacco is quoted at so much per pound, reckoned on the stripped leaf, that is, after the leaf has been stripped from the main stalk.

Bright Virginia Tobacco. This variety, as was stated above, has its home in Virginia and the Carolinas, and it is used for plug and cigar wrappers and for plug fillers. The growing of this crop in Ontario has not yet been experimented with on a large scale, so that the probability of growing it commercially with profit is not by any means assured. The success, however, of the White Burley in Ontario, as compared with the same variety in Kentucky, suggests the reasonableness of expecting success in the growing of Virginia tobacco. The Erie Tobacco Co., as was stated above, are growing a few acres of this crop this year along with an experiment in the curing of tobacco.

The process of curing the Virginia tobacco is different from that used in curing either White Burley or the finer grades for cigar leaf. In Virginia and the Carolinas the following process is used almost exclusively: A shed is built, air-tight, about nineteen feet square, large enough to contain the produce from one acre. The tobacco is hung in the shed after the fashion similar to that used in curing the Burley tobacco. Instead, however, of depending upon the ordinary atmospheric temperature, the building is furnished with two furnaces built at the ground level under the wall at one end of the building. These furnaces are about seven feet in length and two feet in diameter, built of brick in the form of an arch. The furnaces project about five feet inside the wall of the building at the ground. From the inner end of each furnace, the smoke pipe runs around the wall and after circling about, passes out through the outside wall. The furnaces are kept supplied with fuel, night and day, and the heat from the smoke pipes and furnaces keeps the temperature of the building up to a maximum of 120 degrees. After the green tobacco is in, the temperature is raised gradually to 110 degrees, and is kept at this point until the leaves have bleached to the required color. This process is called "yellowing." The temperature is then gradually raised to about 120 degrees for drying. Altogether this kiln curing requires about three days and nights. By ordinary air curing, the time required may be as long as three months. The advantage claimed for this kiln is that it is watched closely, the temperature is immediately under control, and the color and texture of the leaf may be thereby brought out exactly as required.

A building of this sort was in process of erection and nearly completed on my visit to Ruthven, Ont., and since then I have received samples of the tobacco cured by this process. Whether or not the leaf grown here is equal in quality to that grown in Virginia has not yet been determined.

Spanish Leaf. Spanish of one variation or another is the principal variety grown in Wisconsin. The Zimmer or the Comstock Spanish appears

to furnish the most desirable leaf for the manufacture of binders. It is a large leaf, measuring from 20 to 30 inches in length, and from 10 to 20 inches in width. The choicest of these leaves will furnish many wrappers, but in Wisconsin the specialty is high class binder, and the manufacturers of high grade cigars in Ontario use the Wisconsin binder leaf along with the Havanna filler and Sumatra wrapper. The curing of this leaf is similar in process with that of the Burley.

The Connecticut Broad Leaf. This leaf is similar in appearance and size with that of the Spanish. It is, however, somewhat finer and silkier in texture, though the difference may be as much due to climate as to variety. It is the sort grown principally in Connecticut for furnishing the wrapper.

The average crop, either of the Spanish or Connecticut Broad Leaf, will yield slightly less per acre than the White Burley. A good stand of the Spanish will furnish about thirty per cent. of the total weight in binder, the rest being second-class fillers. A good stand of the Connecticut Broad Leaf in Connecticut will furnish about the same proportion of wrapper.

As to these varieties and the advisability of attempting to grow the untried ones in Ontario, it depends upon the point of view. If the object is to conduct a scientific experiment, merely to demonstrate the possibility of growing plug leaf and cigar binder or wrapper of a high grade in Southern Ontario, then I venture to say that the experiment is well worth conducting and will likely prove the fitness of Ontario soil and climate to produce a high grade leaf of these varieties. But when this has been demonstrated, the information thus gained is only of scientific value, and cannot be made of commercial value until the market conditions and until the laws respecting the manufacture of tobacco have been modified. Years ago the growing of White Burley in Ontario was as problematic as the growing of any other variety. It is altogether unlikely that farmers could have been induced to grow it in any large quantity unless they have been at the time assured of an immediate and profitable market. Tobacco is a crop that cannot be held over by the grower without exceptional facilities. It certainly cannot be manufactured by him, nor used by him, nor sold in the open market. The farmer needs to see beforehand whether he can dispose of his tobacco crop quite as much as he needs to arrange for the sale of milk or cream if he proposed to go into that business. This is the secret of the Burley crop in Ontario to-day, namely, that the Company guarantee the immediate and ready sale for the crop, provided the farmers will grow it. Now only that, for the first two years, seed was furnished and instructions given for the cultivation of the crop. What would be the conditions facing the farmer who should undertake to grow, say, five acres of Connecticut Broad Leaf in Southern Ontario next year? He might actually be able to produce a leaf as fine in texture and as suitable for wrapper as that grown in Connecticut. If he should do this, and if the manufacturers of tobacco should be assured as to his success, he would still be unable to sell his crop profitably. Manufacturers who handle Canadian grown tobacco are compelled to hold a special license, and if the Canadian grown tobacco is to be manufactured at the same factory with foreign grown tobacco, but not in combination with the latter, two separate places and outfits are required by law. No Canadian manufacturer would undertake the expense of two outfits, unless there were sufficiently large supplies of Canadian tobacco, and that of the right quality, in sight. The present state of the law respecting licenses would, therefore, prevent the farmer from

finding a profitable market for a high grade leaf. Not only that: the law respecting the stamping of tobacco would operate against the Canadian grown leaf, even though of high grade. The present law requires a green stamp for Canadian grown tobacco, a pink stamp for a combination tobacco, a black stamp for foreign grown home-made tobacco, a blue stamp for tobacco of foreign growth and manufacture. There is at present a prejudice against Canadian grown tobacco. The stamp required by law, marks home grown tobacco, and, in the present state of opinion, prejudices it in the minds of the consumers, so that whatever grade a farmer might succeed in producing in Ontario, he could not, for these two reasons, expect a proportionately good price. It seems likely that in the present state of the tariff a profitable market will not be found for any higher grade of tobacco than is at present produced.

Recommendations Respecting the Experimental Growing of Tobacco.

The climatic conditions in Essex and Kent appear to be favorable for the growing of finer grades of tobacco than are being grown at present. The climatic conditions of the Niagara district and of the Grimsby district seem also to be favorable to the production of the finer grades of tobacco. In all of these districts soil types in abundance may be found, on which the finer grades of cigar tobacco can be grown. In general, what is known as a peach soil, that is, a soil generally sandy in character, well drained, and fertile, is eminently suitable for cigar tobacco.

Variety tests, to be conclusive, must be conducted in the same district, and, in fact, we may say, upon the same soil on which it is intended to grow these varieties commercially. Tobacco, as has been pointed out, is so susceptible to small local influences of climate and soil that a test conducted in one district under certain conditions would not be conclusive if applied to another district in which the conditions seem to be very similar. Therefore, if certain varieties are to be tested for recommendation to growers in the southwestern district, those varieties must be tested there.

On the other hand, there are many important lines of experiments in tobacco growing other than variety tests. Among these are: First, the method of growing plants. In the Leamington district I learned that many of the growers, either through neglect or through unacquaintance with the proper methods, are not in the habit of raising their own plants, but purchase them wherever they can be procured. What is needed in this direction is a series of experiments to determine the surest and best method of germinating the seed and rearing the young plant for the field.

Second, the dates of planting and harvesting. As I pointed out elsewhere in my report, there is a wide difference in practice between the three districts that I have visited, in these matters, and even in southwestern Ontario there is a difference of more than a month between the earliest and the latest planting. It is doubtful if a month's delay can be afforded in producing the tobacco plant, for, I believe, the seasons in Ontario are none too long for best results. To determine, then, the best date for planting and also for harvesting, with a view to securing the best conditions for growing and curing would be an important line of investigation.

Third, methods of cultivation and fertilizing. On one farm in Connecticut that I visited, for which manure and fertilizers are all bought, the annual outlay for these is between $50 and $60 per acre. Fertilizing alone here costs about 3 cents per pound of tobacco produced. While it is agreed

that manures or fertilizers rich in potash rather than in nitrogen are best for tobacco, nevertheless, the exact form of manure or fertilizer as suited to the conditions of the Ontario farm, requires careful investigation.

Fourth, the method of curing tobacco is a feature requiring investigation. Air curing is the method generally in vogue in Ontario, but another method, described earlier in this report, is being introduced at Ruthven, Ont., under the direction of the Erie Tobacco Co., namely, that of kiln drying. How far the latter process may with advantage be carried on is yet to be determined by experiment.

Fifth, perhaps the most important question for investigation is that of breeding a variety of tobacco suited to the climatic and soil conditions of Ontario and furnishing the required characteristics of leaf. This line of investigation falls under the general one of plant breeding. The tobacco plant responds very readily to the efforts of the plant breeder. By selecting in the field plants that exhibit the desired qualities of leaf, or possibly by cross-breeding one variety with another, there is no doubt that a type of tobacco specially suited to our Ontario conditions, and of high quality, can be produced in a comparatively short time. This line of investigation particularly requires expert attention, and cannot be conducted with success through the medium of volunteer experiment stations.

While the variety tests need to be conducted or confirmed on the spot where the commercial results are to be obtained, yet these lines of investigation last mentioned, being general in their character, may be conducted at the Experimental Farm at Jordan. The climatic conditions there are even more favourable, in my judgment, than those in the southwestern district. On this farm, at the north end, there is, I think, soil suitable for tobacco growing. Therefore, the growing of plants, the dates of planting and harvesting, methods of cultivation and fertilizing, and methods of curing can be investigated there, and the results applied with tolerable certainty in the present tobacco district. If this is to be done, it appears that the best method of insuring satisfactory results is to secure the services of an expert tobacco grower, who will be under the direction of the Superintendent of the Jordan Experimental Farm. In addition to this branch of work at the new Experimental Farm, variety tests may be conducted at different points in southwestern Ontario where tobacco is not grown, after the same manner as the present Fruit Experiment Station work.

After all this is done, it must not be forgotten that the proof of the quality of tobacco is in the smoking; and it appears, therefore, before conclusive reports can be handed out to the public as to the growing of any particular variety in Ontario, that arrangements must be made for giving the product fair test in manufacture, with expert reports on the same. This may be managed through the Ontario manufacturers; but, however it is to be done, there is no doubt that an impartial manufacturing test should be given if the higher grades of cigar tobacco are to be produced in Ontario.

BUILDING UP A RUN-DOWN FARM.

By E. C. Drury, B.S.A., Crown Hill.

Throughout the country there are many farms that may properly be described as "run-down," though there are many different grades of depletion. Such farms have greatly deteriorated from their virgin condition, and, though they may not have reached that stage where it is no longer profitable to work them, still it is safe to say they are doing far less than their best. If by any profitable method of farming, and without too great expense these

may be restored to their former good condition, it will mean much both to their owners and to the community at large.

Perhaps a little enquiry into the history of these farms may help us to a clearer understanding of their condition, and of the remedies to be applied. In nine cases out of ten these farms, since they were cleared out of the forest, have been grain-producing and grain-selling farms. Wheat, oats, barley, peas, and timothy hay have been the staples of production, and with the exception of feed for a few horses, a cow or two, and enough young cattle "to work the straw into manure," with possibly a few pigs and sheep, all this has been sold off the farm. On these farms rotation of crops has not been followed to any extent, the different crops being placed wherever, and in whatever order, the farmer's fancy dictated, without any regard to their effect on the land, or on each other. When the land on these farms becomes foul with weeds, as it soon does, owing to depleted fertility, recourse is had to a bare summer-fallow to clean it. Summer-fallowing is also sometimes practised with a view to increasing the soil's fertility. It will be noted that the practice followed on these farms results in returning very little vegetable matter to the soil, since very little barnyard manure is produced, and since the crops grown have very little "crop residue," i.e., roots, stubble, etc., to be plowed under; in the exposure of the soil to the effects of the air in bare cultivation, for comparatively long periods, since bare cultivation almost invariably forms an important part of their practice; and in the actual removal of large quantities of plant-food from the farm, in the crops sold.

The effect of this on the soil is exceedingly harmful. As the result of cultivation, unaccompanied by the return of vegetable matter, the soil becomes poor in humus, approaching in its character that of the unproductive sub-soil. Cultivation invariably results in the oxidation of the vegetable matter in the soil; and in fertile soils, and those plentifully supplied with humus, this is desirable and beneficial, but in soils where very little vegetable matter is returned it results in the disappearance of the humus. Light soils becomes lighter, and suffer to a greater extent from the effects of drouth; and heavier soils, clays, etc., become heavier, run together and bake, and become exceedingly difficult to cultivate. This lack of good physical condition leaves the soil very much at the mercy of the weather. It cannot resist either wet or dry weather, and unless the season is exceptionally favorable, a poor crop is the result. Again, the poverty of actual plant food results in a poor, unprofitable growth of crop and in a corresponding liability to weeds, since weeds will grow wherever the crop is poor, thriving under conditions that stunt and retard our useful plants.

The improvement of these lands, then, will consist in the introduction of large quantities of humus, or vegetable matter, to improve the physical condition of the soil, in the supplying of plant-food in a form available to crops, and in the destruction of weeds. The manner in which these are to be accomplished will depend on circumstances. If the owner of the land wishes quick results, and has a good supply of cash, he may buy manure or chemical fertilizers, use them to obtain a growth of vegetable matter, and, plowing this "green manure" under, supply the soil with humus, and with plant-food as well. At the same time thorough cultivation, combined with the smothering effect of more vigorous crops, may be used to clean the land of weeds. This method is very effective, but is expensive, as it involves the sacrifice of a paying crop, and a large cash outlay. It could scarcely be practised to any large extent by a farmer who depended on his farm for a living. If a depleted purse goes with depleted land, as it too often does, other methods that will allow of the growing of crops continuously, and that

will call for very little cash outlay, must be used. The farmer must depend on the recuperative powers of Nature, wisely directed. Fortunately these alone are sufficient to restore the fertility of the most run-down farms in a comparatively short time.

Plant-food is required. How may we get it without a cash outlay? From the air and the soil, and by husbanding most carefully each fresh supply as we get it. Nitrogen, phosphoric acid, and potash are required. The first may be obtained in abundace from the air by the growth of clovers, peas, and other members of the legume family, which have the power to take the free nitrogen of the air, convert it into the form of vegetable matter, and to leave it in the soil in that shape, for the use of other plants. The others, potash and phosphoric acid, may be obtained by the decomposition of the soil particles themselves. Thus in the air and earth we find the source of our cheap store of fertility. It is for us to use means to concentrate it near the surface of the soil, so that our crops may use it.

A rotation containing clover as often as possible will be the first step to restoration, and will do much, in itself, to accomplish that end. But it sometimes happens that our soil is too poor to afford a catch of clover. In this case other hardier plants, such as buckwheat or rye, may be first used as a green manure, to supply humus, after which it is easier to get a catch of clover. It is well, on a poor farm, to have clover as frequently as possible until the land has somewhat recovered its fertility. Once every three or four years at least clover should be grown on every part of the farm, to give an abundant supply of nitrogen.

The mineral foods, potash and phosphoric acid, come from the soil. Every drop of water falling on and soaking into the earth has the power to dissolve some small portions of these substances out of their inert forms, and to carry it away. Particularly is this true of the warm rains of summer. If we can so arrange things that the water soaking into the earth shall go down into the soil empty, as it were, and come up again laden with some of the mineral food of the lower soil, and leave this food near the surface in such a form that it shall not be washed down again, we shall soon have the surface soil rich enough in these substances. Nature uses this method, and we must imitate it. Did you ever see the poor, barren hill-top from which the surface soil had been removed? Did you ever notice that same hill-top, a few years later, covered with vegetation, rich in plant-food? How did it come? In this way. A few hardy plants took root there, and grew where no others would, and these drew the fertility from the lower layers, and left it near the surface for the use of other plants that came later. The rain falling on the earth dissolves some of its plant food. in the lower lavers as well as at the surface. If the surface of the soil is bare of plants this tends rather to impoverish the surface soil than to enrich it. But where the soil is covered with plants the case is different. The water cannot dissolve the plant-food near the surface, as it is all held by the plants, hence it goes into the lower soil empty. There it dissolves a certain amount of mineral plant-food. Afterwards it is raised to the surface for the use of the plants there, carrying its plant-food with it. There the food is seized and held by the plants, so that it cannot be washed down into the earth again. In this way the mineral plant-food is concentrated near the surface. Hence in restoring the fertility of run-down soils we should use a rotation that will keep the soil covered with growing plants as continuously as possible.

Another cheap source of mineral plant-food is found in the wood-ashes produced on the farm. This source of fertility is too often overlooked, and it is too important to be so treated. A good ash-house should be a part of

every farm, a place built of cement, stone or brick, so as to be fire-proof, and with a good roof. Into this should be emptied all the ashes produced. They constitute a very valuable manure, and may be used to advantage either with roots, or on land seeded with clover. They should always be applied to the surface, not plowed under. The writer has got splendid results from ashes used in this way.

But not only must we get plant-food. We must keep it. The sale of bulky products, hay and grain, must be stopped, and in its place be substituted the sale of animal products. I do not think it possible to build up a run-down farm so long as we continue to sell grain and hay to any large extent. By feeding these to animals we keep, in the manure, nearly all the plant-food contained in the crop, and realize more money for the animal product than we would by selling the crop. Feed live-stock, produce manure, and then take care of it. Avoid heating and leaching, both serious sources of loss to manure. Manure is best saved by being either hauled direct to the land from the stable or stored in an open yard, free from running water or the eave droppings from barns, spread evenly and well tramped. An open yard is to be preferred, generally, to a manure shed, as in the shed the manure is apt to become too dry, and to fire-fang, losing much of its value.

These same methods that have been outlined as a means of restoring fertility serve also to restore humus. Wherever clover and barnyard manure are used the soil cannot long be poor in humus.

Good rotations are as follows:

(*a*) First year, clover; second, hoe crop; third, grain; seeded down the fourth year.

(*b*) First year, clover; second, grain, timothy, for hay or pasture; third, hoe crop and peas; fourth, grain (wheat and barley), seeded down.

These are good rotations, and it will be noted that they provide plenty of clover for nitrogen, plenty of hoed-crop to clean the land, and that in them the land is covered with a growing crop nearly all the time, thus, as was before pointed out, concentrating the mineral plant-food near the surface.

For cleaning the land we use two things—cultivation and the smothering effect of good crops. Cultivation, shallow at first, to sprout weed-seeds, should be given after harvest wherever practicable. Besides the hoed-crop, roots or corn, thoroughly cultivated, can be used advantageously to check and destroy many weeds, even our worst. For some particularly bad weeds, as sow thistle and quack-grass, a bare fallow is effective, but we do not recommend it, as it is too costly, and is wasteful of fertility. Then, as the land becomes richer we find we are less troubled by weeds. Weeds are always most troublesome on poor land, where the crop is weak. I know of no better general method for holding in check weeds of all kinds than to have our land in such condition that it will always grow a good, strong crop.

In regard to depth of plowing it is not wise on poor land to plow deep. A little fertility gives greater results if held near the surface than if scattered through a greater depth. At the same time a deep, rich soil is better than a shallow one, and we should aim, as our land becomes richer, to gradually deepen it till a good depth, say seven or eight inches, is reached.

We have tried to point out some of the methods to be used in restoring worn-out soil. Summing up, we would say: Use a rotation of crops that will have plenty of clover to gather nitrogen, and will keep the land as far as possible covered with growing plants to collect mineral foods, feed live-stock to get manure, and take care of it; take care of your ashes, and don't plow too deep at first. These methods, used intelligently, will restore fertility to a worn-out soil, and will do it not only cheaply, but with profit.

SUGAR BEETS AND BEET SUGAR.

By C. C. James, Deputy Minister of Agriculture.

Beet sugar has been produced in Ontario during the past five years. There have been beet sugar campaigns in Ontario in former days, but the present began in the year 1889, when, at the request of the late Robert H. Lawden, seed was imported from Germany and distributed among farmers in Ontario. The plots were principally situated between Toronto and Whitby. The beets were shipped to the Ontario Agricultural College and tested in the chemical laboratory. The result of the tests by the College chemist, (C. C. James) and Mr. Wilfrid Skaife, manager of the Berthier (Quebec) Beet Sugar Factory, were published in a special report in 1890. The following extracts are taken from that report:

"One thing is certain from the results, viz., that if the beets can be grown of the quality of those produced here, at Mr. Whitfield's, at Mr. Lick's, and at Sir W. P. Howland's garden, they will produce sugar abundantly. The beets grown here are in shape, size, and sugar per cent. fully up to the standard as given by sugar beet authorities." (C. C. James.)

"I shall say finally that the above figures indicate, everything considered, that sugar beets of fine quality can be raised in Ontario, but that early sowing and careful cultivation are perhaps more important factors than in Europe, and that, under the circumstances, the percentage of sugar as above is remarkably high." (Wilfrid Skaife.)

The experiments were continued during 1900 and 1901, the area of experimentation being extended. The beets were sent to the Agricultural College and tested and reports of the results issued in the reports of the Chemist. Separate reports also were issued as follows:

Bulletin No. 113, "Sugar Beet Experiments in Ontario, in 1900," by Dr. A. E. Shuttleworth, Professor of Chemistry, Ontario Agricultural College.

Report of the Sugar Beet Investigation, 1900. In addition to reprinting Bulletin No. 113, this report contained reports of three delegates who were sent to Michigan to enquire into and report upon sugar beet growing in that State. Messrs. C. E. Lundy, D. C. Anderson, and G. C. Creelman.

Report of Sugar Beet Experiments in Ontario in 1901. During this year experiments were being carried on at fifteen centres, as follows: Alvinston, Belleville, Berlin, Cayuga, Clinton, Dunnville, Lindsay, London, Mount Forest, Peterboro, Port Perry, Simcoe, Walkerton, Waterford, Whitby. The report contained the Act to encourage the sugar beet industry passed April 15th, 1901, and gives the names of the four companies first organized to manufacture beet sugar at Wiarton (350 tons of beets daily), Wallaceburg (700 tons), Dresden (600 tons), and Berlin (600 tons). Mention was also made of the fact that in this year 4,800 acres of beets were grown in Ontario for Michigan factories producing upwards of 60,000 tons.

Report of the Sugar Beet Experiments in Ontario in 1902. (By Professor Robert Harcourt). In addition to the records of beets grown particulars were given of the new factories and illustrations of the buildings. There was also a new feature in the report on limestone in Ontario. accompanied by a geological map of the Province giving the distribution of the various limestones, which are required in the factory process.

The following is the Statute enacted in 1901:

An Act Respecting the Encouragement of the Sugar Beet Industry.

Assented to April, 1901.

His Majesty by and with the advice and consent of the Legislative Assembly of the Province of Ontario enacts as follows:—

1. The sum of $225,000 is hereby set apart as a special fund, to be paid out of the Consolidated Revenue of the Province, for the purpose of encouraging the growth of sugar beets, and the establishment of factores within the Province of Ontario for the manufacture of refined sugar therefrom.

2. In this Act the word "year" shall mean the twelve months from June 30th to July 1st of the succeeding year.

3. In case any person or company shall establish and erect in any part of this Province suitable buildings and instal the necessary plant for the manufacture of refined sugar from sugar beets grown within this Province, such person or company shall subject to the provisions of this Act, be entitled to be paid out of the said fund, for sugar so produced of first-class marketable quality, at the rate of one-half cent per pound for the product of the first and second year's operations of such factory, and at the rate of one-quarter cent per pound for the product of the third year, and nothing for any year thereafter.

4. Not more than $75,000 shall be paid out of the said fund in any one year and in case the total amounts claimed as earned in any one year under the provisions of section 3 shall exceed $75,000, the said sum of $75,000 shall be divided among the applicants in proportion to the amounts of their respective claims under this Act

5. Every person or company intending to claim participation in the said fund shall file notice of such claim with the Treasurer of the Province on or before September 1st of the year in which claim is to be made, and the said person or company shall furnish to the Treasurer of the Province such proof of the correctness of the production and transactions of his or their factory as may at any time or from time to time be required.

6. Claims under this Act shall be payable only under and subject to and on proof of compliance with the following conditions:—

(*a*) That during the first year of the operations of such factory, the full sum of at least $4 per ton shall have been paid for all beets delivered at the factory, under contract irrespective of the quantity of saccharine matter contained in such beets.

(*b*) That during the operations of the second and third years of such factory, the said person or company shall have paid for all beets grown according to contract and delivered at the factory at the rate of 33½ cents per ton for every one per cent. of sugar which such beets contain.

(*c*) All forms of contract for the growing and delivery of beets used or to be used by any person or company claiming aid under this Act must be submitted to the Minister of Agriculture and approved by him.

7. In the event of any dispute between any such person or company, and any contractor for the supply of sugar beets as to the quantity of saccharine matter which said beets contain, reference shall be made to the analyst of the Agricultural College, Guelph, or to such person as may be nominated for that purpose by the Lieutenant-Governor-in-Council whose report shall be final.

An Act to Amend the Act Respecting the Encouragement of the Sugar Beet Industry.

Assented to 20th April, 1904.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. In addition to the special fund amounting to $225,000 set apart under the Act passed in the 1st year of His Majesty's reign, chapter 11, the sum of $150,000 is set apart and added to the said special fund and shall be paid out of the Consolidated Revenue Fund, for the purpose of encouraging the growth of sugar beets, and the establishing of factories within the Province of Ontario for the manufacture of refined sugar therefrom.

2. Section 3 of the said Act is amended by striking out all the words therein after the word "quality" in the seventh line and inserting in lieu thereof the words "annually during the first five years' operations of such factory, at the rate of one-half cent per pound, for the product of such factory."

3. Section 6 of the said Act is amended by striking out the words "second and third years" in the first and second lines of clause (*b*) of the said section and inserting in lieu thereof the words "second, third, fourth and fifth years."

From the above it will be seen that the five years of bounties provided for will be completed with the payment in 1907 on the basis of the sugar made from beets grown in 1906.

Based on the experiments conducted under the direction of the Minister of Agriculture, and encouraged by the bounties granted by the Ontario Legislature, the manufacture of sugar from beets has attained considerable proportions in this Province.

The first Ontario sugar campaign—which include the seasons of growing and manufacture—was that of 1902-3, with four factories making:

	Capital Stock	Amount Paid up	Tonnage of beets used
	$	$ c.	
Ontario Sugar Co. (Berlin)	1,000,000	397,490 00	33,647
Dresden Sugar Co.	600,000	600,000 00	25,000
Wallaceburg Sugar Co.	500,000	450,200 00	18,000
Wiarton Sugar Co.	500,000	266,164 26	19,000

The following table shows the quantity of sugar made by each factory while in operation, together with the bounties paid in each year:

Campaign	Factory	Output of Sugar	Bounty from Province
		Lbs.	$
1902-3	Ontario Sugar Co.	6,063,926	30,319 63
	Dresden Sugar Co.	3,763,987	18,819 93
	Wallaceburg Sugar Co.	3,606,604	18,033 02
	Wiarton Sugar Co.	1,565,000	7,825 00
	Total	14,999,517	74,997 58
1903-4	Ontario Sugar Co.	7,059,695	35,298 47
	Dresden Sugar Co.	2,094,999	10,474 99
	Wallacebug Sugar Co.	4,230,422	21,152 11
	Wiarton Sugar Co.	981,000	4,790 42
	Total	14,366,016	71,715 99
1904-5	Ontario Sugar Co	7,260,637	36,303 18
	Wallaceburg Sugar Co.	7,574,708	37,873 54
	Wiarton Sugar Co. (Bal. from 1904)		14 83
	Total	14,835,345	74,191 55
1905-6	Ontario Sugar Co.	9,510,753	34,315 32
	Wallaceburg Sugar Co	11,276,066	40,684 68
	Total	20,786,829	75,000 00
1906-7	Ontario Sugar Co., Berlin	10,341,907	
	Wallaceburg Sugar Co	10,721,107	
	Total	21,063,014	

During the summer of 1904 the Dresden factory was removed to the State of Michigan, and the Wiarton factory had to suspend business, owing to financial difficulties, leaving but two sugar factories operating in the Province. The Provincial bounties entered in the preceding tables as earned by the Wiarton Company in 1903-4 and 1904-5 were paid direct by the Government to the growers of the beets, and not to the company.

Following are the statistics of beets grown for sugar beet factories doing business in the Province in 1905:

Factory.	No. of Growers.	Acreage.	Tons.	Tons per acre.
Ontario Sugar Co. (Berlin)	1,900	4,447	48,085	10.7
Wallaceburg Sugar Co	1,300	6,200	52,000	8.4

The tonnage of beets handled by the two factories in the campaign of 1905-6 exceeded the total tonnage of the four factories operated in 1902-3 by 4,438, while the total quantity of sugar made was nearly 6,000,000 pounds more than the product of any preceding year.

The percentage of sugar in the beets furnished to the Berlin sugar factory in 1904 and 1905 averaged about 15 per cent. On this basis the average yield of 10.7 tons per acre in 1905 would be worth about $53.50 to the grower. The beets sent to the Wallaceburg factory in 1905 averaged 14 per cent. of sugar, and on this basis the average yield of 8.4 tons per acre would be worth to the grower about $39.20 per acre.

The total area of 10,647 acres in 1905 would give an average of about three and one-third acres to each grower. The patrons of the Berlin factory were scattered over eighteen counties.

Before the establishing of sugar factories in Ontario a number of farmers in some of the border counties grew beets for Michigan companies. It is estimated that in 1905 about 20,000 tons of sugar beets were shipped to the United States by Canadian farmers.

Sugar beet pulp is much appreciated by growers of live stock in the Berlin district, and the demand for it has this year exceeded the supply at 50 cents a ton. In the Wallaceburg district, however, the case is different, and the bulk of the pulp is allowed to go to waste.

The thorough cultivation given to the beets, and the tendency of the plant to smother weeds by the spreading habit of its large leaves, put the land in splendid condition for succeeding crops. The main drawback to the raising of the crop is the scarcity of field labor.

THE BUILDING UP OF THE AVERAGE DAIRY HERD FOR THE PRODUCTION OF MILK FOR THE FACTORY.

By Geo. Carlaw, Warkworth.

There is no subject of more importance to the dairymen of our Province than the one above mentioned. In spite of the hundreds of good dairy cows in this Province, the average amount of milk produced is about 3,000 pounds per cow per year, and less than 150 pounds of butter per cow per year. It, therefore, follows that the owners of these average cows and all the cows

below the average, and many of them above the average, must be interested in the improvement of their dairy cattle.

There is no such thing as the dual or general purpose cow; that is to say, the dairy farmer cannot go out among the beef-breeds of cattle and select dairy cows, as well adapted to the cheap production of milk as if he confined himself to some of those breeds that are already noted for their results in this direction. A cow combining excellence in the production of both milk and beef will not have either of these qualities developed to such a high degree as a cow noted for either of these special lines. The qualities necessary to convert grass or other foods into a large flow of rich milk are not the same as those for converting it into good beef. Threfore, the farmer who is following some line of dairy husbandry must select sires to head his herd from those breeds that have for generations been bred to a high degree of excellence in the production of milk and butter.

The sire is said to be half of the herd, but I believe in a herd of poor grades he is very much more than half. By all means use a registered bull, but do not use him because he is registered, as some of them are registered which should not be. Get the pedigrees of several bulls before purchasing, and see what their sires and the dams of their sires have been producing, and be very particular to find out what kind of producers their own dams are; select the best. Buy the very best bred dairy bull you can find. Do not pay so much attention to his ancestors' prize winning at fairs, but to what they can do at the pail and churn. Look not so much to one or two sensational records they may have, but to a good, steady record from beginning to end of each year. Too much importance cannot be placed on the necessity of seeing the dam and knowing that she has a good, square udder, with quarter evenly divided and the teats well placed on each quarter. The teats should be about two and one-half to three inches in length, and of medium size, and be free from all obstructions inside. Prepotency in breeding is the power in an animal to transmit in a marked degree his or her good qualities and characteristics to his or her offspring.

Select the best cows in the herd by weighing each cow's milk after each milking; or, in other words, keep individual cow records and know what your cows are doing. If this is too much trouble select one day in each week, and weigh each cow's milk after milking, morning and evening, and keep the records in a book specially kept for the purpose, using a separate page for each cow. This is not so much trouble as it at first seems, and you will have the satisfaction of knowing at the end of the year which are your profitable and which the unprofitable cows. With very little calculation you can at the end of the year know what your cows are costing you; and without any trouble you can know how much it costs to produce milk; and when you find out the cows that are actually losing you money, sell them to the butchers. There is no use in trying to build up a herd from unprofitable cows, but keep the cows that are showing you a profit. After selecting our sire and cows in this way, we should raise the heifer calves from the best cows. In raising the calves we should guard against their becoming over fat, but I am afraid too many of them are not kept up in that nice, thrifty condition so desirable for the full development of every organ in the young cow. If they are not fully developed in the young, growing animal we can never develop them when the cow has reached maturity; and if kept too fat when young, the sensitive mamary glands become congested with fat, and they will never make that desirable, profitable dairy cow.

THE COMMERCIAL PRODUCTION OF STRAWBERRIES, RASPBERRIES AND BLACKBERRIES.

By W. F. Kydd, Simcoe.

In order to obtain the best results from the production of small fruits it is of the utmost importance to have the soil thoroughly cleaned by a hoe crop the previous year. The land should be well manured, preferably in the fall, before planting, and plowed under shallow. If manure must be put on in the spring it should be short, well rotted, and thoroughly mixed with the soil before planting. Wood ashes is a valuable fertilizer—fifty bushels per acre would not be too much. Scatter the ashes with a small shovel or sow by hand several days before planting; harrow sufficiently so that they may be thoroughly incorporated with the soil. The soil should neither be light sand nor heavy clay. The former is poor and hard to keep rich enough to produce profitable crops, while the latter is disagreeable to cultivate.

Strawberries: Plant as early in spring as plants of good size can be procured. There is nothing gained by planting very small plants. Better wait a week or ten days for good sized plants as small ones are more tedious to set and more of them die. If possible, harrow the land every other day for a week previous to planting. This will kill thousands of weeds just starting.

Strawberries are perfect or imperfect in their blossoms. As a rule the latter are the greatest producers, but must have a perfect flowering variety planted near in order that the bees or the wind may carry the polen to the imperfect flower. I plant every fourth row a perfect variety, and have found that quite sufficient. Care must be taken in selecting varieties for fertilizing, that they blossom at the same date as those that are to be fertilized.

In digging plants the roots should not be exposed to the sun or wind, if a good stand is expected. Dig or prepare plants by putting in bunches. My method is to place several thousand plants in a wheelbarrow, all nicely sorted and roots straightened out, keep them covered with an old blanket, and have a watering can to sprinkle the plants as soon as they are put in the barrow. Plants treated in this way will keep in splendid condition for days.

After the plants are set in the ground, take a garden rake and level the ground all around the plants. The blossoms on young plants must be cut off, if left on, the strength of the plant will go to maturing fruit, instead of making strong plants for the next year's crop. Cultivate while the plants are small. The time to kill weeds is before they appear. The best tool is a horse harrow cultivator, the teeth being only half an inch wide enables one to work very near the plants, and a garden rake can be used between them.

There are different methods of marking the ground for the rows. I have tried several, but for years have used a line, as I can get the rows straighter that way than by any other method. The straighter the row, the easier the cultivation.

I plant according to variety from thirty eight to forty six inches between the rows, and in the row from eighteen to twenty two inches between the plants.

I use a spade with a strong back for making the holes, put it into the ground about six inches, push it backwards and forwards, and if possible do not have the ground with a "glazed" side because unless that glazed side is broken by the planter it will become hard, and the tiny roots cannot penetrate it. Always place the spade in the ground with its edge to the line. Great care must be taken in placing the plants in the earth, not deep enough

to have the crown of the plants covered, nor so shallow as to have a single root exposed.

As runners grow they should be placed between the plants otherwise there will be blanks. I often see in fruit journals "always cultivate one way" That is in order that the runners be not continually moved, but they must be kept cut by a cutter, only permitting the rows to grow the desired width; two feet is wide enough, unless the runners are cut the cultivator "warps" them together and plants are too thick to produce large berries. Hoe often during the summer, never permit weeds to start, watch grass, especially after it has started, as it is next to impossible to hoe it all out; the same land cannot grow weeds and a large crop of fruit.

In the fall as soon as the ground is frozen hard enough to bear a waggon, mulch plants with a coating of straw, taking care the straw is free from weed seeds, and more especially no timothy seed. In spring, after freezing and thawing weather is past, rake off the greater part of straw from plants, putting it between the rows; this keeps the berries cleaner, conserves moisture, and makes it easier for the pickers knees.

Pick when berries are dry, as early in the morning as dew has gone. I have found that berries picked in the hottest part of the day do not ship as well as those picked morning and evening. Some pickers handle fruit as if fingers had never touched it, others have it looking "mussy." The berries should be stripped off the vine between the fingers not pulled by finger and thumb. The latter method bruises and juice runs out of the fruit. Put the berries on the market in a neat, clean package and never "face" with big fruit.

I have not mentioned any particular variety because the kinds that do best here might not be suitable for the locality where the reader of this article resides. Keep varieties that produce well where you live. In buying new kinds, the ones largely advertised, something "boomed," go slow. Try a dozen and those might be twelve too many. Years ago I bought about one dozen of nearly every new kind I saw advertised as "the best yet," with but one exception my money was thrown away. Such plants cost $2 per dozen.

Raspberries: There are two ways of growing the raspberry, planting so cultivation can be done both ways as corn in hills, or cultivating only one way. I tried the former method, but only once: had them in 5 feet x 5 feet but the bush went everywhere; so a horse could do no work without injuring the canes. I plant in rows, seven feet apart and three feet between plants. In Cuthbert, Marlborough, or other such small bushes, one could have the rows closer. A ploughed furrow can be made, plants placed in it, and these covered with a hoe. This is a rapid manner of planting. In the fall or winter, all old wood should be cut or broken off, the new canes or bearing wood must be shortened to about four feet, or a little less. I have done that both fall and spring, sometimes when done in the fall the canes die back, many inches, so I think spring is the better time to shorten canes. The ideal method is to pinch out terminal buds of canes, that is the young shoot, when it is about eighteen inches or two feet from the ground, the cane would then branch and make a much stronger and more stocky bush, but in large quantities that method is hardly practicable.

Blackberries: I have found very profitable. Many varieties are very tender and care should be taken in ordering a kind that will not winter-kill. Plant them a little further apart than raspberries so the pickers may have plenty of room to work, as they have so many thorns. The rows cannot be close, about nine feet apart is close enough. Prune same as raspberries only a little closer.

THE DANGER TO ONTARIO FARMERS FROM THE INTRODUCTION AND SPREAD OF NOXIOUS WEEDS.

By W. S. Fraser, Bradford.

The danger to farmers from having new weeds introduced on their farms and the spread of those that have already made their appearance is not felt to the extent that the situation demands. This is perhaps owing to the fact that they do not realize the effect that weeds have, both on the appearance and productiveness of farms.

Weeds are a serious hindrance to successful farming. They occupy space, and as they are vigorous feeders, use up plant food and deplete the land to no useful purpose. They also draw largely on soil moisture, the lack of which in our land lessens the power of crops to make use of plant food in the soil. It is said that a ton of weeds (dry matter) requires from ten to twenty tons of moisture to produce it. It was once thought that weeds grew spontaneously; but it is well known now that they are the product of seeds which have been planted in the soil. Weeds, as a rule, reproduce themselves abundantly, and their seeds are possessed of great vitality. Many of them, after lying dormant in the ground for years, grow when brought to the surface.

They are despised plants, and because they have always had to struggle for an existence each one is possessed of some strong feature which enables it to thrive and reproduce itself under adverse circumstances; hence the saying, "Grow like a weed," and "Hardy as a weed." We are told that nearly all our weeds have been imported and have been distributed from place to place. Some have wings and are carried by the wind—the thistle family, for instance; some have hooks, such as burrs and ragweed, etc., which attach themselves to animals and clothing. Threshing machines, too, carry them from farm to farm, and railways are great mediums through which they are carried from one district to another.

The investigation that has been carried on under the Department of Agriculture at Ottawa, for the past few years has been a revelation to many. Samples of red clover have been found to contain 40,000 weed seeds per pound, alsike clover 49,000, and timothy 50,000, and as many as sixteen different varieties.

The question of dealing with weeds is one that is pressing itself upon all farmers who have any regard for the appearance or prosperity of their farms. Much more care should be exercised by farmers in the selection of their seed, particularly of clover and grass seeds. Weeds obtained in this way have better chances of growing than those brought to our farms in other ways, as they are sown in land that is well prepared for their growth. The investigation before mentioned has also shown that much of the clover and other grass seed sold to farmers is low in vitality, and this fact, together with the number of weed seeds it contains increases the cost of the genuine seed in some cases 100 per cent., showing clearly that low grade seed is most expensive.

Another source from which we are in danger is the mill feed which we buy. This often contains a very high percentage of weeds. At a meeting of Grain Commissioners, held in Toronto, last September, samples of grain and other mill feeds were shown containing weed seeds that were not crushed and that would in all probability grow.

It was also shown at the same sitting of Commissioners that a large trade is being done in bringing screenings from the elevators in Port Arthur.

and Fort William to Eastern Ontario, where they are re-ground, mixed with barley or corn, and sold under other names. Persons engaged in this trade state that weed seeds have great feed value. Prof. Graham, O.A.C., had a test made of their value in feeding chickens. He says that had he continued the use of the mixture another week, he believes the chickens would have died. And yet these feeds are brought here and sold to farmers for feed, and they are not only disappointing as food, but may bring some of the worst weeds on the continent to the farms.

Weeds are classified as annuals, biennials, and perennials. Annuals complete the cycle of their existence in one season, as mustard, ragweed, and wild oats. Spraying with sulphate of copper is an effective way of dealing with mustard when plants are well up and where it is thick. After-harvest cultivation is a good way of dealing with ragweed and wild oats. Winter annuals are plants which require a longer season than we have to develop them. Their seed usually germinates after midsummer. They endure the winter, and early the following season produce their seed. Prominent among these are false flax and pigeon weed, flourishing mostly in fall wheat and clover. The remedy is to avoid sowing fall grain so far as possible, as spring and fall cultivation destroys them.

Biennials are plants which require two seasons to develop. The first year they develop their root system, the second they produce their seed. Burdock and wild carrot are examples, and are not hard to deal with in cultivated land. By cutting them two inches below the crown they will be destroyed. Cutting above the ground has very little effect, and digging out the root is quite unnecessary. These, like annuals, are only propagated from seed.

Perennials are plants which continue to live on year after year. Simple perennials, such as ox-eye daisy, do not propagate from their roots, but creeping perennials, such as Canada thistle, sow-thistle, and bind weed, reproduce from their roots, as well as from their seed. This class of weeds are the most difficult to eradicate. Thorough cultivation, keeping them cut off for one season and not allowing them to develop deep growth will exhaust the root.

We need to study the nature of weeds and their habits of growth. When a weed appears which is new to us and which we are unable to botanize, we should send a specimen to the O.A.C., Guelph, where it will be identified, and its name, characteristics, and methods of eradication will be sent us by return mail. This will save us much trouble, for the saying that "One year's seeding is nine years' weeding" is too true.

Farmers should pay very particular attention to the cleaning of their seed grain. After purchasing grass seed, we may examine it by spreading it on a sheet of white paper and ascertain what proportion of it is foreign; or if we send a sample to the Seed Department, Ottawa, they will tell us the number of weed seeds it contains per pound.

We cannot afford to neglect any effort to prevent new weed seeds getting a hold on our farms. A bill, introduced by the Hon. Sydney Fisher, has become law, which regulates the sale of seed. This requires that all seed sold be graded and labelled, No. 1, No. 2, or screenings, and that when seed is of a lower grade than labelled the vendor is liable for damages.

THE CANNING INDUSTRY OF ONTARIO.

By T. B. Rivett, B.S.A., Toronto.

The industry of canning and preserving of vegetables and fruit, which to-day has reached immense proportions, and has been attracting a great deal of attention as an investment, but more particularly as the commodity in which a Canadian company practically has the monopoly, was started twenty-six years ago by Mr. Warington Bolter, at Picton in the county of Prince Edward. Mr. Gilbert Barker also started one at Bloomfield in the same year.

At that time machinery and appliances were very inadequate. The canned product had to be introduced and the prejudice of the consumer overcome. With the advent of new machinery, which practically did away with an immense amount of hand labor, and resulted in an improvement in methods, enabling the manufacturer to produce a cleaner and cheaper article, the development of the trade has been most marked, while the consumption has practically become almost universal. Factories have sprung up throughout the whole of Ontario, and are still continuing to be built to such an extent that it would almost seem that production will soon be in excess of demand.

In order to give an idea of the growth of this industry in Ontario, I will give the development of it in Prince Edward, the county in which it was first started, and which is famous for its canned product. About 1881, Warrington Bolter started his factory at Picton, and he was soon followed by Gilbert Barker, who erected a plant in Bloomfield. These men evidently were succesful, for in 1884 Mr. A. C. Miller erected a larger up-to-date plant at Picton, which is said to be one of the biggest and best equipped in the Province to-day.

In 1889 Mr. A. B. Saylor bought the Barker factory at Bloomfield. In 1889 Thomas Owens and J. Barringer started the Quaker factory at Bloomfield. In 1902 J. W. Windsor and T. K. Shourds erected and operated a factory in Wellington. In 1903 Innes Baker started the Old Homestead factory at Picton. In 1904 the farmers of the county realized the probable profitable investment there was to be made in the industry and a company was promoted and operated by Mr. Manton, in which the farmers are the sole stock-holders. This factory is the first successful attempt in this line. In 1904, South Bay Canning Co., started. In 1905 the Lakeside factory was started at Wellington, and was operated by the Bloomfield Canning Co. In 1906 Mr. Bolter started to operate his factory at Demorestville, which he had abandoned. This year the farmers started a factory at South Bay, and the Bloomfield Canning Co., one at Hillier.

There is also the Potter factory four miles south of Belleville, which packs tomatoes, corn and asparagus.

It will be seen that the growth of the canning industry has been rapid in Prince Edward county. In twenty-six years the number of factories has increased from one to twelve. The factories are all up-to-date and substantial. They have bettered the condition of the farmers throughout practically the whole county. They provide labor during the summer and fall months to every available man, woman and child in the county. In fact the county cannot supply enough hands, and the scarcity of them has become a great problem. The amount of farm land utilized by the industry has grown from almost nothing to over 18,000 acres devoted to beans, corn, peas and tomatoes. A large acreage is also devoted to the production of small fruits, apples, pears, peaches, etc., for canning purposes.

It may be easily seen that this once insignificant industry, started twenty-six years ago, has grown tremendously, not only in Prince Edward, but throughout the whole Province of Ontario, for there are now sixty-four factories, which pay the farmers, in round figures, $800,000.00, and give employment to 6,758 people, as well as the splendid investment it has proven to be.

The Canadian Canners, Ltd.

In April, 1903, there was a movement among some of the capitalists interested in the canning industry to combine a number of the different factories under one management. This amalgamation was carried out on April 4th, 1904. They bought out some thirty-five factories located throughout Ontario, and comprising in their pack all the different fruits and vegetables, and in some cases meats and poultry. Mr. Innes was first president, Mr. Marshall was general manager, and the head offices were located in Hamilton.

Of late a great deal has been said about the Canadian Canners, Ltd. The fact that it practically controls the market, is enough to attract the attention of the consumer, and producer. With its 30 factories in operation and situated as they are throughout eastern, western and southern Ontario, it is able to supply all customers any canned commodity. With its magnitude it is able to buy cans, boxes, sugar and other such commodities at a lower figure, and to get better rates for transportation. With its tremendous pack it is able to control, or at least, this is the current opinion, 90 per cent. of the wholesale houses in the Dominion under very strict instringents, which render it a losing proposition should any wholesalers attempt to handle products of other concerns. In fact so strong is their hold on the problem of distribution that the independent factories in quoting their prices to the few wholesalers and brokers who may handle their goods, always quote 5c. less per dozen than the canners opening price, together with the commission on the sales. With these prevailing conditions it is obvious that the stronger the Canadian Canners get, the greater will their influence be in restricting competition and distribution.

On the other hand the independent factories must realize the fact that the Canadian Canners fix the price of goods for the season, and thus they themselves have a solid foundation to work on, a selling basis which does away to a great extent with the cutting of prices, and underselling of products.

Then again the Canadian Canners, Ltd., have to support a high salaried staff at their head office, together with a manager at every branch of the factories, while the independent factories are in most cases managed by the proprietors, or by men who do not receive such salaries. Their cost of production should be less, provided they have bought their essentials at a proportionately good figure as the Canadian Canners, Ltd.

Whatever the effect of this concern may be on the problem of distribution and competition, their effect on the price of farm products will be practically nothing—for in all the sections in which canning factories are situated, the farmers can fall back on other branches of agriculture, and in a way compel the factories to pay the prices asked. By this method the farmer may utilize his acreage, but the loss to a factory to remain idle would be tremendous. This, of course, only holds true with vegetables, while on the other hand fruits will be continued to be grown successfully in spite of the attitude of factories, as the commercial market for all fruits is rapidly increasing. In this way the factory prices are kept buoyant and the com-

petition between market and factory may be looked upon as permanent, as the demand for both canned and ripe fruit is rapidly increasing.

Two or three years ago the tomato growers of St. Catharines demanded 30c. per bushel for tomatoes, and refused to grow any unless under such a contract. Some of them obtained their price, while others continued to grow at the same rate, 25c. per bushel. The result of the failure to obtain the rate of 30c. through that district can be easily explained and understood. The farmers as a body will not unite and stay in unison to obtain a common good—as a body they are most unwieldy, and do not seem to be able to grasp the strength of their power, which is almost unlimited. Their failure, if it may be called such, was due to lack of unity and co-operation.

Prices. Four years ago about the time of the consolidation of the Canadian Canners, the price of tomatoes was raised from 20 to 25c. per bushel. Within this period corn has increased from $5. to $7.50 and even $8. per ton.

Peas used to be $20 per ton in pod the farmer having to harvest by hand, to-day the price is $25 to $30 per ton shelled; the farmer having only to bring the peas in the straw to factory, where it is thrashed and weighed.

The price of fruit has varied a great deal, and this fluctation is due principally to the demand of the local markets. Whether the Canadian Canners had anything to do in the raising of prices is questionable, but the fact remains that at about the time of the consolidation there was a general increase.

A few remarks have been made previously regarding prices, but as this is the greatest factor to the farmer it is necessary to deal with it more fully. For the last three years the farmers have felt that they have not received a high enough price for the products, especially for tomatoes. The price which the farmers have been and are receiving for this product is 25c. per bushel. Two years ago the growers around St. Catharines asked for an increase of 5c. per bushel. This was refused except by one independent company, and as a result a good many of the farmers refused to grow tomatoes for 25c. thinking that the factories would be compelled to pay what was demanded. However the factories shipped tomatoes into St. Catharines by the carload from districts where the farmer was not organized, and was willing to grow his crop for 25c. per bushel. This attempt to raise the price practically failed, and now the old rate is established. When the factories were asked to raise their contract price from 25 to 30c. per bushel, they simply refused and said it was not worth it, and they could not see their way to pay any higher—on the other hand the farmer thought that 30c. was a fair and legitimate price.

Throughout the canning sections of Ontario the crop of tomatoes varies from 75 to 500 bushels per acre, the yield being greatly influenced by the season, a factor which no one can eliminate. By care and management, this, of course, may be controlled to a great extent, but in any case the farmer takes all the risks, and even when he grows his tomatoes, the factory has the right to object to any which do not seem perfect.

Taking 75 as the minimum and 500 as the maximum (not exceptional) yield we would have an average yield of probably 275 bushels to the acre. This at 25c. per bushel is equivalent to $68.75 per acre. Then deduct 25 per cent. as cost of production, which is $17.18, allow $10.00 for rent of land and we have approximately $41.57 per acre net profit for the farmer. This estimate does not allow for risks of frost which are very great, for the late frost affect the tender plants and the early frosts the bearing vines, and stop ripening of fruit.

In my opinion the farmer does not receive a fair remuneration for his labor, pains and risks when he is compelled to grow tomatoes for 25c. a

bushel. If he could grow 400 bushels to the acre then 25c. would seem to allow a fair profit, but in very few cases is this average maintained, and even where it is, it is only under very favorable conditions. Should the factories, however, raise the price per bushel, I believe that in a great many cases it would be a profitable investment on their part, especially if the increase was in proportion to the quality of the fruit delivered at the factory. For at the present time the farmers' primary object is to grow bulk of crop not quality and smoothness of same, and it seems quite feasible that if the 30c. was paid for the best grade of fruit and 25c. for other grades that there would be a general tendency on the part of the farmer to improve his methods and attempt to grow a greater percentage of the better produce.

Whether or not the factories will consent to pay such figures is impossible to predict, but should the growers of canned products throughout the Province organize to get such raises in prices; there is no hestitation in predicting that they would succeed, if only they stood together for their common interests throughout the whole of Ontario. But it is practically no use for any one section trying to fight if tomatoes are grown a few miles away, and are available to be shipped to the place of scarcity, thus enabling the factory to continue its operations.

List of average wholesale prices for the past four years and 1907:

Vegetables.

	1903-06.	1907.
Tomatoes	25c. per bushel.	25c. per bushel.
Peas	$25. to $30. per ton.	$25 to $30 per ton.
Corn	$5. to $7.50 per ton.	$7 to $8 per ton.
Beans	$25 to $30 per ton.	$25 to $30 per ton.
Pumpkins	$2. to $2.50 per ton.	$2.50 to $6.00 per ton.
Asparagus	7c to 10c per lb.	11c per lb.
Rhubarb	$5 to $6 per ton.	$8 per ton.

Fruits.

Apples	25 to 40c. per cwt.	50c to 60c per cwt.
Pears	1 to 2c. per lb.	1½c. to 2½c. per lb.
Peaches	25 to 35c. per basket.	
Plums	20c. per basket.	30c. to 40c. per basket.
Gooseberries	50c. per basket.	3c. to 5c. per quart.
Raspberries	5 — 6c. per quart.	8c. to 9c. per quart.
Blackberries	6 — 6c. per quart.	7c. to 12c. per quart.
Strawberries	4 — 5c. per quart.	5c to 8c. per quart.

Varieties: The question of varities is one of very great importance, both to the grower and canner. The canners ideal variety of any product is one that has firmness, evenness, and the smallest percentage of waste material possible, while the farmers ideal is productiveness and earliness of maturity.

In Ontario where the season is comparatively short, and the early frost damages the produce for factories, earliness should be the predominant feature of any variety, and the basis of selection.

There are but few experiments carried on by the growers, and still fewer by the factories. The farmers are only required to grow what varieties are recommended to them by the managers of the factories and, as a general thing, the seed is also supplied by them.

STATISTICS OF FACTORIES BY DISTRICTS.

The following table shows the varieties grown in the different districts, the amount of produce consumed, etc.

VEGETABLES.

Eastern Ontario, exclusive of Prince Edward County.

		Value.
Beans, 52 acres, 144½ tons,	$25.50 per ton	$3,670 00
Varieties—Refugee, Goldenwax.		
Corn, 1,500 acres, 4,050 tons,	$6.59 per ton	26,725 00
Varieties—Peck's Improved, Crosby, Excelsior.		
Peas, 400 acres, 675 tons,	$27.22 per ton	18,375 00
Pumpkins, 80 tons,	$2.50 per ton	200 00
Tomatoes, 1,005 acres, 219,750 bushels,	25.1 cents per bushel	55,186 00
Varieties—Clarke, Early Jewel, Quaker Queen, Earliana, Early Michigan, Ignotum, Stone, Livingstone.		
Total		$104,156 00

Prince Edward County.

Beans, 109 acres, 233 tons,	$32.15 per ton	7,490 00
Varieties—Golden Wax, Refugee.		
Corn, 3,137 acres, 8,330 tons,	$7.00 per ton	65,440 00
Varieties—Early Crosby, County Gentleman, Early Evergreen.		
Peas, 1,320 acres, 2,295 tons,	$31.89 per ton	71,350 00
Varieties—Alaska, Advancer, Market Gardener.		
Tomatoes, 1,334 acres, 311,000 bushels,	25 cents per bushel	77,750 00
Varieties—Nore's King of the Early, I.X.L., Worden, Livingstone's Globe, Henderson's Freeman, Bruce's Niagara.		
Total		$222,030 00

Southern Ontario.

Beans, 189 acres, 281 tons,	$24.00 per ton	6,750 00
Varieties—Golden Wax, Refugee.		
Corn, 3,400 acres, 6,620 tons,	$6.59 per ton	43,662 00
Varieties—Stowell's Evergreen, Excelsior, Early Crosby, Hiccox.		
Peas, 1,462 acres, 1,974 tons,	$22.35 per ton	44,270 00
Varieties—Glory, Alfa, Market Gardener, Advance.		
Pumpkins, 490 tons,	$2.98 per ton	1,425 00
Tomatoes, 2,877 acres, 677,900 bushels,	23.3 cents per bushel	171,425 00
Varieties—Earliana, Success, Favorite, Ignotum, Matchless, Early Michigan, Marvel Paragon, Royal Red, Earliest of All, Greater Baltimore, Perfection, Stone.		
Total		$267,532 00

Western Ontario.

Beans, 7 acres, 10 tons,	$25.00 per ton	250 00
Varieties—Golden Wax, Refugee.		
Corn, 670 acres, 1,400 bushels,	$6.39 per ton	8,950 00
Varieties—Early Crosby, Early Evergreen, Stowell's Evergreen.		
Peas, 260 acres, 275 tons,	$25.00 per ton	6,875 00
Varieties—Alaska, Advance, Market Gardener.		
Pumpkins, 85 tons,	$2.50 per ton	202 50
Tomatoes, 420 acres, 88,500 bushels,	25 cents per bushel	22,135 00
Varieties—Early Michigan, Ignotum, Earliana, Stone, Livingstone.		
Total		$38,412 50

FRUIT.

Eastern Ontario, exclusive of Prince Edward County.

Apples, 1,500 bushels, (All winter varieties.)	22 cents per bushel	325 00
Peaches, 3,000 baskets, Imported from Niagara District, Yellow Fleshed varieties.	25 cents per basket	750 00
Pears, 500 bushels, Varieties—Bartlett, Clapps.	50 cents per bushel	250 00
Plums, 2,000 baskets, Varieties—Lombard, Green Gage, Dawson.	20 cents per basket	400 00
Raspberries, 90,000 quarts, Varieties—Cuthbert.	6½ cents per quart	5,625 00
Strawberries, 74,000 quarts, Varieties—Wilson, Williams, Albany.	5 cents per quart	3,700 00
Total		$11,050 00

Prince Edward.

Apples, 7,500 bushels, (All winter varieties used.)	40 cents per bushel	3,000 00
Raspberries, 112,000 quarts, Varieties—Cuthbert, Columbia, Shaffer's.	5 cents per quart	5,600 00
Strawberries, 200,500 quarts, Varieties—Wilson, Williams.	5c per quart	10,025 00
Total		$18,625 00

Southern Ontario.

Apples, 80,200 bushels, (All varieties used.)	25¾ cents per bushel	20,640 00
Blackberries, 38,000 quarts	6 cents per quart	2,280 00
Gooseberries, 16,050 quarts, Varieties—Downing, Pearl.	4⅞ cents per quart	782 50
Peaches, 149,100 baskets, Varieties—Old Nixon, Crawfords, Mountain Rose, Elberts, Early St. John, Fitzgerald, Smock.	28¼ cents per basket	41,880 00
Pears, 30,000 baskets, Varieties—Bartlett, Kieffer, Flemish Beauty.	28⅔ cents per basket	8,600 00
Plums, 21,300 baskets, Varieties—Claude, Niagara, Lombards, Yellow Egg.	20¾ cents per basket	4,410 00
Raspberries, 534,000 boxes, Varieties—Cuthbert, Marlborough, Columbia, Shaffer and Wild Fruit.	6½ cents per box	35,045 00
Strawberries, 652,500 boxes, Varieties—Wilson, Williams, Brandywine.	4⅘ cents per box	31,480 00
Total		$125,057 50

Western Ontario.

Apples, 16,500 bushels, (All winter varieties used.)	25½ cents per bushel	4,275 00
Blackberries, 3,220 quarts, Varieties—Snyder.	6 cents per quart	193 20
Gooseberries, 1,320 quarts, Varieties—Downing.	5 cents per quart	66 00
Pears, 1,000 bushels, Varieties—Bartlett, Keiffer.	40 cents per bushel	400 00
Strawberries, 1,400 quarts, Varieties—Wilson, Williams, Albany.	5 cents per quart	700 00
Total		$5,634 20

Independent Factories.

Independent factories are those that are not associated with consolidated canners. There are thirty-four of these distributed throughout the province, and the number is gradually on the increase.

These factories pay the farmer the same price as the Canadian Canners, except in a few cases in Prince Edward County, where owing to the large number of factories in the same territory, the competition has been keener and prices in some cases high.

Independent factories may be divided into three separate classes:—

No. 1—Independent. Those factories not in the consolidation and which do not receive any bonus from any municipality or county.

No. 2—Subsidized Independent. Those factories which are independent, but which are bonused by a municipality or public corporation.

No. 3—Farmers' Factory. Those factories which receive or do not receive any bonus, but the stock of same is owned and controlled by the farmers in the district.

The independent factories of Ontario are doing a good business, amongst their number we find some of the best equipped and cleanest of factories, and some of their brands are pre-eminent. They greatly out-number the others of this class. One of the independents, the Oshawa Cannig Co., is a concern which seems to have solved the problem of distributions. The promoter of this company, in order to get the necessary capital, sold the stock amongst the smaller grocers in Ontario. I understand that the stock is thoroughly distributed in the different sections. By this move it would seem evident that all the shareholders, except those who are completely in the hands of the wholesalers, would carry and push this company's goods in the mere preservation of their own interests, and so long as the pack of the Oshawa Canning Co., is good, competition in the district of the shareholder will be much handicapped.

The Subsidized Independents. There in only one factory of this class in Ontario, which is situated at Essex, and known as the Essex Canning Co., This Company received a bonus of $5,000.00 to erect and operate a canning factory in the town of Essex for 5 years. This would appear an excellent way for adding industry to a community.

Farmers' Canning Factory. As previously explained. the stock of these factories is held and controlled by the farmer. Here the farmer not only gets the sale value of his produce, but he receives the interest on his investment. These conditions should stimulate every farmer to be more thorough in his cultural methods, and choice of varieties, and in the production of a higher grade of produce, which would lessen the waste at the factory, increase quality of pack and add prominence to the brands. This method of distributing the capital stock of canneries throughout the farming community, thus interesting and stimulating the farmers to be more interested in its welfare, seems a very admirable one, and one to be encouraged. This probability in the case of the farmers has two incentives:—

(1) Opening of new and productive channels for his operations on the farm.

(2) The inducement to invest in a sound proposition with the probability of receiving from 10-20 per cent. for his money.

With these two points it seems a rather easy undertaking to induce farmers who have some money to take up the proposition and invest. But the question of distributions and over-production must be looked into. One has indeed overcome the greater part of the problem of production, but his

greater task of establishing his brand, and overcoming the problem of distribution still remains. He has also to face the question of demand and supply, and if having satisfied oneself as to favorable relation of these two facts. The farmer cannot invest his money in a more profitable way, and one which has such desired beneficial bearing on himself and his community at large, than in the Canning industry.

Should these factories increase throughout Ontario to any extent and consolidation take place, the position would carry extreme power.

The first of these factories was started at Leamington, and ran for one season, when the farmers were so disgusted with their mismanagement that they sold out below par, and Mr. McGregor bought in the stock and entered the consolidated canners. Here again their failure was due to lack of unity and co-operation. Every shareholder thought that because he had his money invested, all his goods, bad or good, had to be taken. The result was a bad pack and general demoralization of the whole affair. The failure of this attempt was a great misfortune, for situated in such a locality the farmers should have been able to grow the best of vegetables, and have established an excellent brand.

The next attempt was made in Bloomfield, Prince Edward county, in 1904 and is known as the Farmers' Canning Co. From the start this venture has been a success, and this may chiefly be attributed to the fact that it was started in a locality where the canning industry had been established for some time, and the farmers had a greater conception of the business of growing produce for the factory, than the farmers of Leamington. A great deal of the success is also due to Mr. Manton, the promoter and manager of the concern, who has satisfied the growers and stock-holders, and is building up a better business every year.

The third attempt was started this year at South Bay. The farmers of that district have formed a company with a capital of $40,000 and are building an up-to-date factory, where they hope to can small fruits and vegetables next year. This year they will only be able to put up tomatoes.

Contracts.

In order to get some adequate opinion of the amount of acreage that a canning concern has under its control for the coming season, and also to have some hold on the producers, every factory contracts under written agreement with farmers in its immediate neighborhood, to grow so many bushels, tons, or acres of any commodity. Their contracting is not done promiscuously, i.e., making agreements with any farmer to grow a large acreage, but the record of every producer is kept, his average yield of the different crops is deducted and the manager-acting on this data together with his own judgment allots to such a producer, approximately, what he considers him to be able to produce.

There are several different types of contracts, but in every case they are drawn up wholly for the benefit of the factory. In the question of production where the quantities in a contract is enumerated in acres, we find the yield is limited per acre. On the other hand some contracts call for so many bushels omitting any acreage. So in a case of over-production of crops the factories have it in their power to limit the production of canned produce, providing their estimate in the contract was in any way correct.

In cases of short crops, some contracts even go so far as to specify that should any growers have a larger acreage or quantity than what was called for in the contract, and should the factory need the excess, he must sell to the factory at contract price or pay 25 per cent. of liquidated damages. In any case these canning factory contracts are well matured contrivances to

legally protect their issuers in every way. While their only apparent value to the farmer is to assure him that he may sell so much produce, subject to the inspection and regulation of the factory. But although these contracts are legally and theoretically correct, yet their whole value lies in the amount of moral jurisdiction it will have over the producer, for should a factory prosecute a contractor for breach of contract, and get judgment against them and finally collect a fine, their popularity and good faith would immediately decrease, and in this way they would lose their producers. So the value of a contract to a factory, outside of such technical points as conditions and amount of produce, depends wholly on the moral effect such an agreement may have on the contractor, who in this case is the farmer, for should the management of a factory prosecute all infringements of their contracts, they would soon have to grow their own produce, as the farmer seems always to be ready to co-operate and concentrate their energies in self-protection, especially when the courts have been used as a means of arousing them.

CANNING FACTORIES OF ONTARIO.

Eastern Ontario, exclusive of Prince Edward County.

Consolidated.

Brighton Canning Co	Brighton.
Kent Canning Co	Brighton.
Lakeport Preserving Co	Lakeport.
Miller & Co	Trenton.
Port Hope Canning Co	Port Hope.

Independent.

Belleville Canning Co	Belleville.
The Napanee Canning Co	Napanee.
Oshawa Canning Co	Oshawa.

Prince Edward County.

Consolidated.

W. Boulter & Sons	Picton.
A. C. Miller & Co	Picton.
A. B. Saylor Canning Co	Bloomfield.

Independent.

Bloomfield Canning Co	Hillier.
Bloomfield Packing Co	Bloomfield.
Farmers' Canning Co	Bloomfield.
Lakeside Canning Co	Wellington.
Port Milford Canning Co	South Bay.
Potter's Canning Co	Belleville.
South Bay Canning Co	South Bay.
The Old Homestead	Picton.
Wellington Packing Co	Wellington.

Western Ontario.

Consolidated.

Canadian Canners' Consolidated Co	Strathroy.
Strathroy Canning Co	Strathroy.
West Lorne Canning Co	West Lorne;

Independent.

Lytle, T. A. & Co	Toronto.
Meaford Canning Co	Meaford.
Rock Maple Pickle Factory	Guelph.
Williams & Sons	Toronto.

SOUTHERN ONTARIO.

Consolidated.

Aylmer Canning Co	Aylmer.
Aylmer Canning Co	Hamilton.
Bowlby Bros	Waterford.
Delhi Canning Co	Delhi.
Delhi Canning Co	Niagara-on-the-Lake.
Dunnville Canning Co	Dunnville.
Grimsby Canning Co	Grimsby.
Imperial Canning Co	Kingsville.
Kent Canning Co	Sandw'ch.
Kent Canning Co	Chatham.
Lalor, F. R., Canning Co	Dunnville.
Leamington	Leamington.
Lowrey Bros	St. David's.
Ontario Pure Food Co	St. Catharines.
Strathroy Canning Co	Dresden.
Simcoe Canning Co	Hamilton.
Simcoe Canning Co	Simcoe.
Simcoe Canning Co	St. Catharines.
Schenck, L. M. & Co	St. Catharines.

Independent.

Alvinston Canning Co	Alvinston.
Black's Canning Co	St David.
Burlington Canning Co	Burlington.
Canada Preserving Co	Hamilton.
Essex Canning Co	Essex.
Flynn Bros. Canning Co	St. Catharines.
Goodwillie, Jno	Welland.
Heintz (pickles)	Burlington.
St. Thomas Canning Co	St. Thomas.
Standard Canning Co	Hamilton.
Smith, E. D	Winona.
Smith, E. D	Beamsville.
Tecumseh Canning Co	Tecumseh.
Thames Canning Co	Thamesville.
Upton Co	Hamilton.
Usher's Canning Co	St. David.
Wallaceburg Canning Co	Wallaceburg.
Wethey T. H	St. Catharines.

LABOR.

	Females.	Males.
Eastern Ontario, exclusive of Prince Edward County	546	297
Prince Edward County	895	610
Western Ontario	223	121
Southern Ontario	2,551	1,515
Total	4,215	2,543

Females	4,215
Males	2,543
Total number people	6,758

Following are two forms of contract, showing how the two factories named contract for their supplies of produce. They are to a certain degree typical of the contracts used in the Province.

THE DELHI FRUIT AND VEGETABLE CANNING COMPANY, LIMITED.

AGREEMENT made this day of 190

BETWEEN THE DELHI FRUIT AND VEGETABLE CANNING COMPANY, LIMITED, hereinafter called the Company, and

of , hereinafter called the Contractor.

WITNESSETH that the said Contractor hereby contracts and agrees with the said Company for the consideration hereinafter set out and subject to the terms and conditions hereinafter expressed :

(1) To plant, sow, and grow in a husband-like and proper manner, upon his farm, and premises, during the appropriate season, during the year 190 , and to plough, hoe, till and cultivate the growing crop in a farm-like manner, and to harvest, cut, save and deliver, at the Company's premises, Delhi, in proper condition, and fit for canning, at such times and in such quantities as the Company may require, the following crop or crops :

.....Bushels Tomatoes	at	Bush.	
.....Tons Sweet Corn	at	Ton.	
.....Acres Sweet Peas	at	lb.	
.....Acres Butter Beans	at		
.....Acres Valentine Beans	at		
.....Acres Crystal Wax Beans	at		
.....Baskets Raspberries, Red....oz. per Basket		Basket	
..... " " Black "		"	
.....Baskets Strawberries, red.....oz. per Basket		Basket	
.....Baskets Currants, red..... "		Basket	
.....Baskets Gooseberries		Basket	
.....Baskets Cherries		Basket	
.....Bushels Peaches, Yellow	at	Bushel	
.....Bushels Pears	at	Bushel	
.....Bushels Apples	at	Bushel	

(2) In consideration whereof the Company agrees to pay the Contractor the price set opposite the respective crop so delivered, as follows : For Strawberries, Raspberries and Gooseberries, one half 1st August next, and balance 1st October next. For Tomatoes, Corn, Peas and Beans, one half 1st October next, and balance 1st January next.

The Company is the sole judge of the condition and fitness of the crop, and its suitability for the Company's purposes, and shall determine the same according as the crop is presented for delivery at the Company's premises.

The Company may, for sufficient cause, refuse to accept any crop, or any part of any crop, and shall be in no way liable to Contractor for so doing.

No alteration or modification of this contract shall be recognized or allowed by the Company. No Fruits or Vegetables are to be delivered on Saturdays, without first obtaining consent of the Company.

WITNESS

READ YOUR CONTRACT CAREFULLY.

This Agreement made the.....day of.....A.D. 190 Between..... of the First Part, and the Napanee Canning Company, Limited, of the Second Part :

WITNESSETH, that the said party of the First Part for and in consideration of the promise and agreement hereinafter written and undertaken by the said parties of the Second Part, doth hereby promise and agree to sow or plant on suitable, well-fitted ground, and cultivate in first-class order for the season of 190 .....*acres with sweet corn ½ early ½ late*, which the party of the First Part agrees to receive ; and also .....*acres of sweet corn* which the party of the First Part agrees to deliver in case the party of the Second Part shall require the same. .....*acres with tomatoes*, ...*acres with beans*, ...*acres with sweet peas*, ...*acres with strawberries, Wilson's Albany*, ...*acres with*.....*variety* .....*acres with red raspberries, Cuthbert Variety*, ...*acres with black raspberries*, (all seeds to be furnished by the parties of the Second Part) and to deliver the sound, merchantable product of same not exceeding two and one-half tons Corn to the acre, Two hundred bushels of 60 lbs., Tomatoes to the acre, Two tons of Green Beans to the acre, Two tons of Sweet Peas to the acre, Two thousand imperial quarts (1¼ lbs. to the quart) Strawberries to the acre.....imperial quarts (1¼ lbs. to the quart) Red Raspberries to the acre.....imperial quarts (1¼ lbs. to the quart) Black Raspberries to the acre, and balance of crop or any they may plant or sow outside of this contract, at same price if required by parties of the Second Part to the parties of the Second Part at the NAPANEE CANNING CO., Limited ; said delivery shall be made between the first day of June, 190 , and the first day of October, 190 , at such times between the aforesaid dates, and in such condition of freshness and maturity as may be required by the said parties of the Second Part, their servant or agent to be the exclusive judge of the fitness of the product for canning ; said delivery shall not exceed one-twentieth of the crop on any one day, unless by consent of the parties of the Second Part, and no delivery shall be made upon any Saturday or on any day previous to a Statutory or other holiday unless by consent of the parties of the Second Part.

IN CONSIDERATION WHEREOF, the said parties of the Second Part agree to receive the sound, merchantable product of the same, (not exceeding the aforesaid mentioned quantities to the acre) and pay for the same to the party of the First Part at the rate of : Sweet Corn.....per ton ; Tomatoes.....per bushel of sixty lbs. until Oct. 1st, balance of crop after Oct. 1st to be subject to the call of the Napanee Canning Co., Limited, in such quantity as they may require at prices already named ; Strawberries.....cents imperial quart ; Green Peas.....per ton in pod ; Green Beans.....per ton in pod. Napanee Canning Co., Limited, will pay for produce, ½ on First of November, balance on Jan. 1st, 1906, or will pay in full when full delivery is made less 3% discount.

This contract is to be void in case Factory should be burned or rendered inoperative by any unforeseen cause, PROVIDED ALWAYS, and it is hereby expressly agreed that should the parties of the Second Part rebuild the factory after its loss by fire or otherwise as aforesaid so as to be able to manufacture the above as contracted for, then this agreement to remain in full force and effect as though no fire or unforeseen cause had occurred ; and it is further agreed that the printed instructions on the back of this contract are acceded to and are made a part hereof.

And the party of the First Part further agrees to report weekly to the office of the Napanee Canning Co., Limited, at their office Napanee, the prospects of his crop ; and the party of the First Part agrees not to sell any produce to any other party from the above acreage contracted, during the continuance of this agreement, or any they may plant or sow outside of it if required by NAPANEE CANNING CO., Limited, and failing to comply with this contract as above stated then the party of the First Part hereby agrees to pay to the parties of the Second Part 25 per cent. Liquidated Damages and not as a penalty for non-fulfilment of this contract. It is also expressly and mutually agreed by and between the said parties to this contract that should any legislation be enacted lowering the present tariff whereby the Canned Goods business of the parties of the Second Part might suffer in any particular then and in that case the party of the First Part does hereby consent to a reduction in the prices named above as follows :—on Corn, Peas and Beans, one dollar per ton ; on Tomatoes two cents per bushel ; Berries one cent per quart.

NAPANEE CANNING COMPANY, LIMITED.

Per.....

Signed in Duplicate.

Witness.....

(The following appears on back of Form of Contract given on page 142.)

INSTRUCTIONS TO CONTRACTORS.

SEASON OF 190...

Concerning Produce for Delivery to Napanee Canning Co., Limited, at their Factory, at Napanee, Ont.

Sweet Corn must have good soil, and clean cultivation, and must not be planted within forty rods of other corn or they will readily mix. Successive plantings must be made so that the crop may mature in rotation and prevent overstocking at time of delivery.

Sweet Corn must be picked when young and tender, and in a creamy state, suitable for table use. It must be broken off close to the ear, and delivered immediately after picking, and *never left in a wagon or in a heap over night* as it will easily heat, and heated corn, nubbins, mixed, and that which is too old will be rejected, and charged back to the parties delivering, although accepted or credited.

Tomatoes must be of the large, smooth, red varieties, picked when red ripe and thoroughly clean and delivered the same day they are picked. Green, unsound, unclean and small tomatoes will not be received.

Peas must be sown early in the season, and at different sowings, and plenty of seed used to the acre. Picked when the pods are well filled, tender and green, and delivered the same day they are picked. Peas are not to be left in bags, in a wagon or in a head over night, or in the sun through the day; heated, shrivelled, dried or discolored pods will be rejected.

Beans must be picked and delivered with the same care as peas. They must be young and tender, and without beans of any size in pods.

All produce must be delivered before 7 o'clock p.m. daily, and on Saturday or day preceding holidays, as within mentioned nothing will be received.

No payment will be made on Saturday or any Holiday as within mentioned, for any produce.

NAPANEE CANNING CO., Limited, or their agent, to be exclusive judge of the above named products for canning, and when the products do not grade first-class a reduced price may be paid and must be accepted.

ANNUAL REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1906

PART II. MEETINGS AND STATISTICS.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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FARMERS' INSTITUTES OF ONTARIO.

1906-07.

ANNOUNCEMENT OF SUPERINTENDENT.

This volume contains statistics regarding Farmers' Institutes and announcements of meetings together with names of speakers and subjects. It will be noticed that we have included in the list of meetings some which have already been held, but which are not recorded elsewhere.

The nature of the work carried out during the year has been much the same as in former years. We have, however, given increased prominence to the judging of live stock and the use of illustrative material in imparting information upon the subjects dealt with. We are pleased to note that the results following special meetings in the interests of fruit growers are most gratifying. Some twenty or more co-operative fruit societies are doing effective work in the growing, picking, packing and marketing of fruits of different kinds. Many of these are the outgrowth of special meetings arranged for through this Department. The Department of Farmers' Institutes also arranged for a series of lectures before Horticultural Societies; and, in co-operation with the Dominion Department of Agriculture, held a series of special meetings to encourage the production of good seeds, and to present to the farmers approved methods of combating noxious weeds, which we are sorry to note are gaining ground in some sections of the Province.

Summer Meetings.

As will be seen from the records given herewith, we held a number of meetings during the past summer in the northern districts of the Province. In many of these sections it was thought that summer meetings, while probably not so largely attended in some localities as the winter meetings, were of greater benefit to the communities concerned. The speakers are able to judge of the agricultural conditions during the summer months and have the advantage of using live stock in illustrating and demonstrating their lectures. Some twelve points in the Rainy River and Lake of the Woods districts were covered during the past season, and the second annual series of meetings was held in the Temiskaming district.

Women's Institutes.

This branch of the work has grown considerably during the past year. The number of Institutes which did effective work is considerable in excess of the preceding year, the total number of branches which are carrying on regular work being about 300, while Institutes are established in 76 electoral districts. The membership at the end of May last was 10,404. The possibilities in connection with the Women's Institute work are becoming more fully realized, and a keener interest is being shown from season to season. The greatest need at this time is that some means be adopted by which systematic help and direction may be furnished to the officers and members. We are pleased to record that the Department has already consented to give assistance along the line indicated.

Conference for Lecturers and Officers.

Provision is being made this season for the holding of a special Conference of Institute lecturers at the Agricultural College, Guelph. By bringing the men who attend the meetings throughout the country in contact with each other and with the lecturers at the College, it is thought that much good will be accomplished by way of deciding upon uniformity of method and the points upon which special importance should be laid. With definiteness of purpose, more uniformity in methods, and a more complete supply of illustrative material, it is certain that much better service will be rendered this year than in former seasons.

We trust that the officers and directors will continue to appreciate the important position which they occupy in furthering the interests of the farmers of the Province. They can do much by thorough advertising, personal invitation, and active interest at the time of the holding of the meetings to make the work successful.

GEO. A. PUTNAM.

REPORTS OF LOCAL FARMERS' INSTITUTES

Institute District.	Membership, December, 1905.	Membership to June, 1906.	No. of meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.			
						Cash on hand per last report.	Members' fees.	Grants.	Receipts from excursions and conventions.
						$ c.	$ c.	$ c.	$ c.
1. Addington	75	74	6	573	19	36 89	18 50	50 00	.....
2. Algoma, Centre	154	66	5	498	20	90 41	17 50	50 00	.....
3. Algoma, East	137	123	8	1,342	26	44 32	22 00	25 00	24 00
4. Algoma, North Shore	.....	52	4	350	16	.....	18 25	.....	.....
5. Amherst Island	30	40	4	218	6	90 10	7 50	25 00	.....
6. Brant, North	113	257	13	439	39	85 01	50 80	50 00	77 82
7. Brant, South	255	318	11	1,235	40	62 41	77 75	50 00	204 20
8. Brockville	85	179	8	1,308	35	6 87	44 50	50 00	.....
9. Bruce, Centre	109	113	7	556	29	189 28	26 50	25 00	123 55
10. Bruce, North	110	122	7	625	20	95 44	21 95	50 00	54 04
11. Bruce, South	167	237	9	3,750	32	222 96	39 50	25 00	94 02
12. Bruce, West	262	291	8	1,345	26	198 96	73 00	50 00	85 09
13. Carleton	230	117	8	935	27	67 04	57 75	50 00	.....
14. Cornwall	91	86	6	875	12	39 15	21 00	37 50	.....
15. Dufferin	217	324	11	1,486	70	141 74	81 50	25 00	38 00
16. Dundas	174	210	8	1,303	36	218 62	44 50	49 85	.....
17. Durham, East	209	258	10	573	28	81 48	62 50	55 25	48 50
18. Durham, West	150	175	11	795	28	185 75	45 75	50 00	85 60
19. Elgin, East	302	304	7	822	34	154 66	74 50	50 00	.....
20. Elgin, West	139	143	6	990	24	47 10	34 75	50 00	.....
21. Essex, North	114	181	7	930	34	17 23	46 25	50 00	.....
22. Essex, South	156	157	8	600	33	55 81	39 25	75 00	.....
23. Frontenac	110	124	8	898	28	38 64	27 00	50 00	.....
24. Frontenac, Centre	69	90	6	325	17	26 78	18 00	.....	.....
25. Glengarry	224	229	7	1,725	33	23 56	57 25	50 00	.....
26. Grenville, South	140	176	12	1,130	22	.....	44 00	50 00	.....
27. Grey, Centre	205	283	13	1,830	71	.....	68 20	50 00	130 67
28. Grey, North	248	287	12	1,075	31	104 12	73 50	50 00	59 92
29. Grey, South	262	255	10	2,255	33	156 87	70 75	50 00	224 50
30. Haldimand	408	417	11	2,487	46	518 27	98 25	50 00	126 70
31. Halton	535	627	11	2,167	20	191 99	123 60	50 00	211 75
32. Hastings, East	144	159	11	1,155	41	.....	40 00	50 00	37 55
33. Hastings, North	488	162	10	1,010	33	92	60 50	50 00	.....
34. Hastings, West	50	65	7	985	20	68 48	15 50	50 00	.....
35. Huron, East	307	386	12	2,092	44	224 83	96 25	50 00	68 32
36. Huron, South	317	306	9	2,775	46	365 97	78 00	50 00	65 44
37. Huron, West	122	94	9	1,720	51	80 99	33 00	50 00	75 57
38. Kent, East	184	188	9	700	35	59	45 75	50 00	.....
39. Kent, West	211	166	9	1,001	35	39 70	42 25	50 00	.....
40. Lambton, East	182	217	10	1,030	45	236 61	51 25	50 00	50 85
41. Lambton, West	285	291	10	845	45	193 35	73 25	50 00	50 85
42. Lanark, North	193	109	8	654	24	11 56	27 50	50 00	.....
43. Lanark, South	92	104	8	865	44	.....	25 75	50 00	.....
44. Leeds, N. and Grenville, N.	129	163	8	1,081	41	.....	40 75	50 00	.....
45. Leeds, South	225	215	8	1,495	37	5 30	52 75	50 00	.....
46. Lennox	80	154	9	908	38	49 98	38 50	50 00	.....
47. Lincoln	236	211	9	1,995	25	196 35	57 50	55 00	38 00
48. Manitoulin, East	107	41	*	.....	.....	13 02	26 75	25 00	11 00
49. Manitoulin, West	36	78	12	†540	†24	32 54	17 50	25 00	.....
50. Middlesex, East	329	315	9	1,597	36	265 49	76 00	50 00	131 30
51. Middlesex, North	352	350	12	2,110	59	336 55	91 50	50 00	113 95
52. Middlesex, West	175	199	7	1,215	35	43 23	51 25	50 00	55 12
53. Monck	111	138	7	824	21	4 14	25 50	55 00	.....

* Meetings were held in June, 1905, and October, 1906. † Estimated.

FOR THE YEAR ENDING JUNE 30, 1906.

Receipts.—*Con.*			Expenditure.										
Miscellaneous.	Balance due Treasurer.	Total receipts.	Due Treasurer per last Report.	Expense for meetings.	Secretary's salary, etc.	Postage and stationery.	Printing and advertising.	Lecturers' expenses.	Miscellaneous.	Total expenditure.	Balance on hand.	Total.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
.....	.....	105 39	.....	24 50	20 00	8 65	11 00	.....	6 50	70 65	34 74	105 39	1
1 95	.....	159 86	.....	17 80	15 00	3 00	18 75	.....	13 50	68 05	91 81	159 86	2
2 10	.....	117 42	.....	27 25	25 50	1 50	3 00	18 35	.....	75 60	41 82	117 42	3
.....	.....	18 25	.....	4 00	.....	1 16	4 75	.....	.....	9 91	8 34	18 25	4
.....	.....	122 60	.....	4 25	10 00	1 50	4 39	.....	16 00	36 14	86 46	122 60	5
.....	.....	263 63	.....	78 50	11 85	5 52	37 45	.....	35 20	168 52	95 11	263 63	6
3 00	.....	397 36	.....	20 50	80 40	8 28	55 04	33 10	139 98	337 30	60 06	397 36	7
.....	.....	101 37	.....	17 00	15 00	6 83	19 70	20 35	21 75	100 63	74	101 37	8
.....	.....	364 33	.....	35 45	42 75	5 00	22 75	15 00	15 00	135 95	228 38	364 33	9
4 39	.....	225 82	.....	28 30	44 00	5 67	17 95	42 05	9 95	147 92	77 90	225 82	10
.....	.....	381 48	.....	94 40	42 00	15 25	40 55	.....	17 50	209 70	171 78	381 48	11
6 95	.....	414 00	.....	3 75	61 35	10 74	28 65	.....	102 00	206 49	207 51	414 00	12
.....	.....	174 79	.....	13 65	29 65	9 80	9 00	.....	11 20	73 30	101 49	174 79	13
.....	.....	97 65	.....	8 00	27 85	2 50	26 50	9 65	2 50	77 00	20 65	97 65	14
11 71	.....	297 95	.....	64 30	37 60	4 25	34 10	3 75	25 01	169 01	128 94	297 95	15
.....	.....	312 97	.....	31 50	40 00	4 13	39 54	.....	10 00	125 17	187 80	312 97	16
.....	.....	247 73	.....	12 25	30 00	7 75	42 40	.....	29 60	122 00	125 73	247 73	17
4 95	.....	372 05	.....	11 50	35 00	2 55	59 55	20 05	27 20	155 85	216 20	372 05	18
4 38	.....	283 54	.....	.....	33 80	2 32	33 50	16 58	40 30	126 50	157 04	283 54	19
.....	.....	131 85	.....	8 50	25 80	12 59	12 50	7 50	26 20	93 09	38 76	131 85	20
.....	.....	113 48	.....	17 55	15 00	1 35	12 75	26 03	25 00	97 68	15 80	113 48	21
.....	.....	170 06	.....	4 50	25 00	4 50	12 23	27 96	68 45	142 64	27 42	170 06	22
.....	.....	115 64	.....	6 25	20 00	2 25	29 50	20 00	.....	78 00	37 64	115 64	23
.....	.....	44 78	.....	16 00	.....	1 60	7 50	11 80	5 05	41 95	2 83	44 78	24
2 25	.....	133 06	.....	21 85	31 85	1 50	20 00	10 55	5 75	91 50	41 56	133 06	25
.....	.....	94 00	9 75	21 30	25 00	3 58	14 25	10 10	3 45	87 43	6 57	94 00	26
21 95	.....	270 82	4 52	58 10	35 50	4 49	16 25	66 13	37 72	222 71	48 11	270 82	27
8 00	.....	295 54	.....	43 10	66 95	5 97	20 16	45 00	12 00	193 18	102 36	295 54	28
107 40	.....	609 52	.....	76 05	130 80	5 03	39 75	28 10	243 30	523 03	86 49	609 52	29
13 39	.....	806 61	.....	120 35	115 80	22 40	105 25	.....	31 85	395 65	410 96	806 61	30
.....	.....	577 34	.....	112 45	100 00	14 75	57 62	.....	96 00	380 82	196 52	577 34	31
.....	.....	127 55	3 72	16 00	35 00	13 50	23 75	16 50	.....	108 47	19 08	127 55	32
.....	.....	111 42	.....	9 45	30 00	3 90	14 50	53 15	.....	111 00	42	111 42	33
1 35	.....	135 33	.....	12 50	30 00	2 50	8 50	13 50	1 00	68 00	67 33	135 33	34
5 93	.....	445 33	.....	59 15	78 50	7 02	24 65	.....	25 15	194 47	250 86	445 33	35
.....	.....	559 41	.....	67 08	4 85	7 06	40 97	20 05	97 70	237 71	321 70	559 41	36
.....	.....	239 56	.....	81 55	60 00	4 50	12 76	16 25	20 00	195 06	44 50	239 56	37
.....	.....	96 34	.....	10 75	25 00	23 04	21 75	9 40	60	90 54	5 80	96 34	38
6 35	.....	138 30	.....	16 67	24 10	9 40	5 50	10 95	.....	66 62	71 68	138 30	39
.....	.....	388 71	.....	22 00	44 65	6 33	12 25	54 64	24 50	164 37	224 34	388 71	40
.....	.....	367 45	.....	66 10	47 95	3 60	23 50	14 10	23 00	178 25	189 20	367 45	41
.....	.....	89 06	.....	39 55	26 10	1 12	11 00	4 20	.....	81 97	7 09	89 06	42
.....	25 13	100 88	25 43	24 95	25 00	.....	25 50	.....	.....	100 88	.....	100 88	43
85 05	13 61	189 41	27 75	57 60	10 00	4 36	18 25	.....	71 45	189 41	.....	189 41	44
.....	.....	108 05	.....	67 30	15 00	1 30	14 00	.....	5 50	103 10	4 95	108 05	45
3 30	.....	141 78	.....	19 40	31 50	3 85	12 50	21 00	.....	88 25	53 53	141 78	46
.....	.....	346 85	.....	16 05	30 00	10 34	56 93	38 50	19 00	170 82	176 03	346 85	47
2 10	.....	77 87	.....	.....	12 50	1 65	9 89	31 25	7 00	62 29	15 58	77 87	48
.....	2 50	77 54	.....	5 00	15 00	10 29	7 50	39 00	75	77 54	.....	77 54	49
8 53	.....	531 32	.....	77 70	40 00	22 48	36 03	13 35	23 80	213 36	317 96	531 32	50
.....	.....	592 00	.....	80 70	93 10	8 61	21 50	60 80	30 25	294 96	297 04	592 00	51
3 00	.....	202 60	.....	12 00	40 00	4 62	12 50	21 95	5 10	96 17	106 43	202 60	52
.....	.....	84 64	.....	10 45	27 00	4 29	15 65	22 45	3 00	82 84	1 80	84 64	53

REPORTS OF LOCAL FARMERS' INSTITUTES

Institute District.	Membership, December, 1905.	Membership to June, 1906.	No. of meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.			
						Cash on hand per last report.	Members' fees.	Grants.	Receipts from excursions and conventions.
						$ c.	$ c.	$ c.	$ c.
54. Muskoka, Centre	53	60	5	217	6	17 51	13 00	25 00	10 00
55. Port Carling Branch	25	23	3	200	6	2 28	3 75	.....	.....
56. Muskoka, North	111	128	6	294	29	21 16	27 75	25 00	.....
57. Muskoka, South	103	70	5	252	18	11 05	18 75	30 00	.....
58. Nipissing, West	71	49	8	428	23	20 05	13 50	25 00	.....
59. Norfolk, North	290	325	10	2,055	53	181 57	80 50	50 00	43 85
60. Norfolk, South	112	141	6	745	25	12 77	32 75	50 00	43 85
61. Northumberland, East	99	216	8	1,540	28	.....	52 00	50 00	16 54
62. Northumberland, West	99	155	7	1,198	31	101 48	38 75	50 00	11 12
63. Ontario, North	264	156	11	593	10	315 32	54 00	75 00	100 00
64. Ontario, South	303	289	11	975	42	93 33	77 75	50 00	101 69
65. Oxford, North	298	265	11	2,035	41	28 85	65 50	50 00	195 10
66. Oxford, South	466	498	14	2,250	56	45 10	131 50	61 73	118 50
67. Parry Sound, East	227	94	18	1,284	101	161 33	53 00	28 00	135 95
68. Parry Sound, West	42	154	7	107	11	24 46	1 50	25 00	.....
69. Peel	411	404	13	2,466	47	58 17	86 50	50 00	197 50
70. Perth, North	280	295	9	1,621	34	136 17	72 50	50 00	200 60
71. Perth, South	243	283	8	2,000	45	255 54	61 00	50 00	113 50
72. Peterboro, East	122	116	8	1,818	46	1 69	27 00	50 00	48 50
73. Peterboro, West	185	185	8	1,542	50	1 89	46 75	50 00	58 50
74. Prescott	78	72	7	376	18	68 94	16 25	50 00	.....
75. Prince Edward	158	223	12	785	27	99 47	97 00	50 00	.....
76. Rainy River, Sonth	78	72	12	524	36	.....	27 00	20 00	2 05
77. Renfrew, North	89	92	7	900	24	18 77	23 25	50 00	.....
78. Renfrew, South	111	.....	6	644	23	140 24	26 00	50 00	3 24
79. Russell	153	140	7	1,825	32	.....	31 25	50 00	29 00
80. Simcoe, Centre	312	335	11	1,428	55	272 98	64 80	25 00	169 80
81. Simcoe, East	77	181	8	766	31	128 94	39 50	25 00	122 80
82. Simcoe, South	139	138	9	752	35	9 43	32 00	25 00	8 00
83. Simcoe, West	203	250	9	1,132	44	323 59	63 25	50 00	167 48
84. Stormont	116	166	†8	1,300	30	16 30	41 00	50 00	.....
85. St. Joseph Island	252	211	7	1,602	20	28 73	55 00	41 68	.....
86. Temiscamingue	224	62	10	448	25	.....	4 75	25 00	.....
87. Victoria, East	137	146	9	1,758	37	18 90	34 25	50 00	.....
88. Victoria, West	135	109	7	629	44	22 53	39 60	50 00	29 92
89. Waterloo, North	562	562	14	3,218	59	139 50	131 00	50 00	69 67
90. Waterloo, South	719	705	17	2,891	103	110 15	196 75	50 00	171 10
91. Welland	361	334	11	1,492	54	272 58	94 50	50 00	150 50
92. Wellington, Centre	558	624	10	2,440	47	86 06	157 00	50 00	35 80
93. Wellington, East	412	325	9	1,485	44	44 20	84 00	50 00	38 00
94. Wellington, South	274	309	6	1,270	8	105 48	466 00	50 00	.....
95. Wellington, West	251	291	9	3,003	35	221 67	87 25	50 00	107 00
96. *Union*	145	187	7	1,149	22	109 90	42 00	37 50	53 45
97. Wentworth, North	332	255	11	2,710	36	.....	62 75	25 00	.....
98. Wentworth, South	271	316	12	2,686	54	64 49	76 25	25 00	66 00
99. York, East	228	295	16	1,528	39	110 84	73 25	50 00	74 05
100. York, North	.....	101	7	255	20	.....	.....	.....	.....
101. York, West	172	219	11	983	54	56 05	35 00	50 00	170 75
TOTALS:						$	$	$	$
1905-6	20,186	21,052	910	126,084	3,497	9,321	5,631	4,397	5,150
1904-5	22,703	19,793	845	102,008	3,209	9,535	5,009	4,596	4,316
1903-4	23,799	21,257	833	106,719	3,165	8,663	5,636	4,698	6,352

FOR THE YEAR ENDING JUNE 30, 1906.—*Continued.*

Receipts.—*Con.*				Expenditure.									
Miscellaneous.	Balance due Treasurer.	Total receipts.	Due Treasurer per last Report.	Expense for meetings.	Secretary's salary, etc.	Postage and stationery.	Printing and advertising.	Lecturers' expenses.	Miscellaneous.	Total expenditure.	Balance on hand.	Total.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1 65	.....	67 16	.....	12 50	12 00	2 50	7 75	.....	3 60	38 35	28 81	67 16	54
1 50	.....	7 53	.....	25	.....	1 95	1 80	2 25	.....	6 25	1 28	7 53	55
4 20	17 85	95 96	.....	33 30	40 65	2 66	6 50	.....	12 85	95 96	.....	95 96	56
2 20	.....	62 00	.....	6 70	25 00	3 09	6 00	.....	5 00	45 79	16 21	62 00	57
.....	.....	58 55	.....	6 50	19 85	2 50	3 00	.....	.....	31 85	26 70	58 55	58
.....	.....	355 92	.....	61 50	50 00	13 00	31 50	17 40	16 50	189 90	166 02	355 92	59
.....	.....	139 37	.....	10 65	50 55	2 63	30 25	13 80	19 05	126 92	12 44	139 37	60
65 60	.....	184 14	27 90	15 00	32 00	3 93	22 57	30 15	46 55	178 10	6 04	184 14	61
.....	.....	201 35	.....	32 75	20 00	4 75	25 50	28 34	13 25	124 59	76 76	201 35	62
9 65	.....	553 97	.....	13 50	171 25	4 00	56 25	74 85	21 35	341 20	212 77	553 97	63
5 47	.....	328 24	.....	13 35	55 00	.....	88 49	72 66	5 00	234 50	93 74	328 24	64
.....	.....	339 45	.....	34 80	48 70	7 60	67 25	33 05	31 00	222 40	117 05	339 45	65
7 70	.....	364 53	.....	43 00	55 00	24 47	73 23	95 45	68 85	360 00	4 53	364 53	66
6 75	.....	385 03	.....	131 75	52 35	14 75	44 82	.....	16 75	263 42	121 61	385 03	67
.....	14 54	65 50	.....	40 00	15 00	3 00	7 50	.....	.....	65 50	.....	65 50	68
.....	.....	392 17	.....	121 60	124 80	6 71	39 00	.....	5 45	297 56	94 61	392 17	69
4 50	.....	463 77	.....	67 15	59 15	9 48	71 38	24 85	52 25	284 26	179 51	463 77	70
.....	.....	480 04	.....	68 25	20 00	17 00	33 10	.....	18 00	156 35	323 69	480 04	71
1 95	4 81	133 95	.....	30 05	43 50	3 90	18 25	18 00	20 25	133 95	.....	133 95	72
.....	.....	157 14	.....	25 75	37 25	6 50	41 25	13 00	3 00	126 75	30 39	157 14	73
.....	.....	135 19	.....	25	29 80	4 82	14 95	4 95	.....	54 77	80 42	135 19	74
1 99	.....	248 46	.....	43 15	20 00	4 29	64 25	55 55	.....	187 24	61 22	248 46	75
.....	.....	49 05	.....	6 50	10 00	4 15	5 50	.....	2 60	28 75	20 30	49 05	76
.....	16 69	108 71	.....	30 60	25 00	13 50	23 86	.....	15 75	108 71	.....	108 71	77
.....	.....	219 48	.....	18 00	27 50	4 30	48 33	13 92	10 15	122 20	97 28	219 48	78
.....	.....	110 25	26 03	11 50	28 00	8 50	14 50	18 75	.....	107 28	2 97	110 25	79
.....	.....	532 58	.....	121 59	83 50	7 52	18 05	29 35	19 50	279 51	253 07	532 58	80
.....	.....	316 24	.....	62 15	49 50	20 80	65 15	4 15	13 20	214 95	101 29	316 24	81
.....	7 05	81 48	.....	12 50	25 60	4 15	17 00	13 45	8 78	81 48	.....	$1 48	82
18 00	.....	622 32	.....	101 50	82 00	8 00	28 28	46 30	117 25	383 33	238 99	622 32	83
.....	25	107 55	.....	25 50	26 80	2 50	27 50	22 75	2 50	107 55	.....	107 55	84
8 00	.....	133 41	.....	.....	25 00	4 71	10 50	10 00	75 91	126 12	7 29	133 41	85
.....	.....	29 75	.....	.....	.....	2 32	.....	.....	.....	2 32	27 43	29 75	86
.....	11 44	114 59	.....	34 10	20 00	10 69	16 25	23 55	10 00	114 59	.....	114 59	87
.....	.....	142 05	.....	16 60	30 25	7 48	23 50	11 95	22 55	116 33	25 72	142 05	88
.....	.....	390 17	.....	54 15	106 80	17 75	53 78	46 25	24 45	303 18	86 99	390 17	89
4 04	.....	532 04	.. ...	128 50	129 65	14 16	35 75	25 70	151 35	485 11	46 93	532 04	90
6 45	.....	574 03	.....	119 45	55 00	5 00	12 70	27 85	64 35	284 35	289 68	574 03	91
10 65	.....	339 51	.....	59 45	48 05	14 06	36 25	25 55	33 40	216 76	122 75	339 51	92
6 30	.....	222 50	.....	24 25	38 95	5 00	30 00	22 35	47 65	168 20	54 30	222 50	93
15 60	.....	637 08	.....	10 20	58 50	7 80	34 80	.....	427 00	538 30	98 78	637 08	94
.....	.....	465 92	.....	58 00	33 00	13 00	45 05	15 60	92 50	257 15	208 77	465 92	95
5 25	.....	248 10	.....	15 00	37 05	5 45	12 50	11 45	25 00	106 45	141 65	248 10	96
.....	17 80	105 55	16 00	16 75	35 00	5 05	27 75	.....	5 00	105 55	.....	105 55	97
.....	16 95	248 69	.....	108 45	25 00	12 34	65 60	. ..	37 30	248 69	.....	248 69	98
.....	.....	308 14	.....	28 80	58 65	12 89	37 15	13 85	35 00	186 34	121 80	308 14	99
.....	.....	....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	100
.....	.....	311 80	.....	19 80	59 40	17 15	40 00	32 90	62 00	231 25	80 55	311 80	101
$	$	$	$	$	$	$	$	$		$	$	$	
495	149	25,143	141	3,673	4,039	712	2,770	1,793	3,102	16,230	8,913	25,143	
463	141	24,061	112	2,959	3,912	666	2,552	1,736	2,803	14,740	9,321	24,061	
530	112	25,991	143	3,532	3,813	791	2,726	2,550	2,895	16,450	9,541	25,991	

ATTENDANCE, MEMBERSHIP, ETC., 1905-1906.

The membership for the six months ending June, 1906, is 1259 greater than for the corresponding period of 1905. It is gratifying also to note that the total attendance for the year was 23,000 more than for the preceding year, and this total has been exceeded in only two or three previous seasons.

The Institutes holding the largest number of meetings during the year ending May 31st, 1906, are :—

Parry Sound, East..... 18	Huron, East..... 12	Halton..... 11
Waterloo, South..... 17	Middlesex, North..... 12	Hastings, East..... 11
York, East..... 16	Manitoulin, West..... 12	Oxford, North..... 11
Waterloo, North..... 14	Brant, South 11	Durham, East 10
Oxford, South..... 14	Dufferin 11	Grey, South..... 10
Peel 13	Durham, West..... 11	Lambton, East 10
Brant, North..... 13	Ontario, North 11	Lambton, West..... 10
Grey, Centre..... 13	Ontario, South 11	Norfolk, North..... 10
Grenville, South..... 12	Simcoe, Centre 11	Hastings, North 10
Grey, North..... 12	Welland 11	Wellington, Centre 10
Prince Edward 12	York, West 11	Temiscamingue..... 10
Wentworth, South..... 12	Haldimand..... 11	

The Institutes having the largest attendance at their meetings are as follows :—

	No. of Meetings.	Attendance.		No. of Meetings.	Attendance.
Bruce, South.....	6	3,750	Haldimand	11	2,487
Waterloo, North	14	3,218	Peel.....	13	2,466
Wellington, West.....	10	3,003	Wellington, Centre.....	10	2,440
Waterloo, South.....	17	2,891	Grey, South	10	2,255
Huron, South	9	2,775	Oxford, South	14	2,250
Wentworth, South.....	12	2,686	Halton	11	2,167

The Institutes having the largest membership to June, 1906, are :—

Waterloo, South..... 705	Middlesex, North 350	Huron, South..... 306
Halton 627	Simcoe, Centre..... 335	Elgin, East 304
Wellington, Centre..... 624	Welland 334	Perth, North..... 295
Waterloo, North 562	Norfolk, North..... 325	York, East 295
Oxford, South..... 498	Wellington, East..... 325	Wellington, West 291
Haldimand 417	Wentworth, South 316	Lambton, West..... 291
Peel..... 404	Middlesex, East..... 315	Ontario, South 289
Huron, East 386	Wellington, South..... 309	Grey, North 287

The Institutes having the smallest membership are :—

Amherst Island 40	Temiscamingue 62	Manitoulin, West..... 78
Manitoulin, East..... 41	Hastings, West 65	Muskoka, Centre..... 83
Nipissing, West 49	Muskoka, South 70	Cornwall 86
Algoma, N. S..... 52	Prescott 72	Frontenac, Centre..... 90
Algoma, Centre 66	Rainy River S..... 72	Renfrew, North..... 92

SPECIAL NORTHERN MEETINGS HELD IN 1906.

Dr. H. G. Reed, Georgetown ; Miss L. Gray, 650 Bathurst Street, Toronto.

1	Reay, School House	South Muskoka	June	4
2	Germania, Wise's School House	South Muskoka	"	5
3	Purbrook, School House	South Muskoka	"	6
4	Macauley, W. C. Denniss' Grove	South Muskoka	"	7
5	Baysville, Town Hall	South Muskoka	"	8
6	Bardsville, School House	South Muskoka	"	9
7	Port Carling, Town Hall	Port Carling	"	11
8	Brackenrig, School House	Port Carling	"	12
9	Ufford	Centre Muskoka	"	13
10	Raymond	Centre Muskoka	"	14
11	Allansville, Allansville House	Centre Muskoka	"	15
12	Utterson, Town Hall	Centre Muskoka	"	16
13	Callander, White's Hall	East Parry Sound	"	18
14	Powassan, Stewart's Hall	East Parry Sound	"	19
15	Nipissing, School House	East Parry Sound	"	20
16	Restoule, School House	East Parry Sound	"	21
17	Loring, Russell Hall	East Parry Sound	"	22
18	Arnstein, School House	East Parry Sound	"	23
19	Golden Valley, School House	East Parry Sound	"	25
20	Commanda, School House	East Parry Sound	"	26
21	Trout Creek, Trussler's Hall	East Parry Sound	"	27
22	South River, Vincent's Hall	East Parry Sound	"	28
23	Sundridge, Orange Hall	East Parry Sound	"	29
24	Burk's Falls, Sharp's Hall	East Parry Sound	"	30
25	Midlothian, School House	East Parry Sound	July	2
26	Doe Lake, School House	East Parry Sound	"	3
27	Kearney	East Parry Sound	"	4
28	Emsdale, Agricultural Hall	East Parry Sound	"	5
29	Sprucedale, Agricultural Hall	East Parry Sound	"	6
30	Magnetawan, Orange Hall	East Parry Sound	"	7

W. C. Shearer, Bright ; Miss B. Maddock, Guelph.

1	Iron Bridge, Orange Hall	East Algoma	June	6
2	Goldenburg, School House	East Algoma	"	7
3	Sowerby, Maccabee's Hall	East Algoma	"	8
4	Livingstone Creek, School House	East Algoma	"	9
5	Little Rapids, School House	East Algoma	"	11
6	Alma Heights, School House	East Algoma	"	12
7	Desbarats	North Shore Algoma	"	13
8	MacLennan	North Shore Algoma	"	14
9	Bar River	North Shore Algoma	"	15
10	Echo Bay	North Shore Algoma	"	16
11	Tarantorus, School House	Centre Algoma	"	18
12	West Korah, School House	Centre Algoma	"	19
13	Base Line, School House	Centre Algoma	"	20
14	Goulais Bay, School House	Centre Algoma	"	21
15	East Korah, School House	Centre Algoma	"	22
16	Walford	East Algoma	"	25
17	Warren, Town Hall	West Nipissing	"	26
18	Sturgeon Falls, Town Hall	West Nipissing	"	27
19	North Bay, Widdifield Hall	West Nipissing	"	28

Andrew Elliott, Galt ; Miss Laura Rose, Guelph.

(Rainy River and Lake of the Woods Districts.)

1	Kenora		June	18
2	Eagle River, School House		"	19
3	Oxdrift		"	20
4	Dryden, Town Hall		"	21
5	Murillo, Town Hall		"	22
6	Papoonge, School House No. 1		"	23
7	Stanley, School House No. 2		"	25
8	Hymers, School House		"	26

SPECIAL NORTHERN MEETINGS.—*Continued.*

9	O'Connor	June	27
10	Bishop's Mills	"	28
11	Ouimet, School House	"	30
12	Wolf River, Dorion School House	July	2

(Temiscamingue District.)

13	Haileybury, Orange Hall	July	5
14	New Liskeard, Orange Hall	"	6
15	Hillview, School House	"	7
16	Milberta, Newton's Hall	"	9
17	Uno Park, School House	"	10
18	Hanbury, School House	"	11
19	Thornloe	"	13
20	Earlton, School House	"	14
21	Heaslip, School House	"	16
22	Hillliardtown, School House	"	17
23	Judge, School House	"	18

E. C. Drury, Crown Hill; Mrs. D. McTavish, North Bruce.

1	Sheguindah, Trotter's Hall	East Manitoulin	October	10
2	Green Bay	East Manitoulin	"	11
3	Manitowaning, Agricultural Hall	East Manitoulin	"	12
4	Wikwemikong, Council Chamber	East Manitoulin	"	13
5	Slash, School House	East Manitoulin	"	15
6	Tehkummah, School House	East Manitoulin	"	16
7	Big Lake	East Manitoulin	"	17
8	Mindemoya, School House	East Manitoulin	"	18
9	Grimesthorpe, School House	West Manitoulin	"	19
10	Kagawong, Hillard's Hall (afternoon)	West Manitoulin	"	20
11	Kagawong, No. 1 School House (evening)	West Manitoulin	"	20
12	Gore Bay, Forester's Hall (afternoon)	West Manitoulin	"	22
13	Gordon, School House (evening)	West Manitoulin	"	22
14	Barrie Island, School House	West Manitoulin	"	23
15	Ice Lake, School House	West Manitoulin	"	24
16	Poplar, School House	West Manitoulin	"	25
17	Evansville, School House	West Manitoulin	"	26
18	Silverwater, School House	West Manitoulin	"	28
19	Meldrum Bay, Foresters' Hall	West Manitoulin	"	29
20	Cockburn Island	West Manitoulin	November	1
21	Richards' Landing, Town Hall	St. Joseph Island	"	5
22	Kentvale, Kent's Hall	St. Joseph Island	"	6
23	Tenby Bay, School House	St. Joseph Island	"	7
24	Carterton, Town Hall	St. Joseph Island	"	8
25	Marksville, Town Hall	St. Joseph Island	"	9

SPECIAL MEETINGS FOR FRUIT GROWERS

Delegates:—D. Johnson, Forest: A. Gifford, Meaford.

Simcoe	March	2
Ingersoll	"	12
Burford	"	13
Oakville	"	14
Clarkson	"	15
Orillia	"	16
Thornbury	March	26
Meaford	"	27
Duntroon	"	28
Kimberley	"	29
Churchill	"	30
Burlington	"	31
Sparta	April	2

Delegate:—A. E. Sherrington, Walkerton.

Owen Sound	March	10
Forest	"	12
Thedford	"	13
Arkona	"	14
Belleville	"	15
Newcastle	March	16
Port Elgin	"	30
Arkona	May	31
Orillia	June	28

SPECIAL MEETINGS.—*Continued.*

Delegates :—A. E. Sherrington, Walkerton ; P. J. Carey, Fruit Division, Ottawa.

Parkhill	March 26	Mount Brydges	March 28
Ilderton	" 27		

D. Johnson, Forest, and P. J. Carey.

Burgessville	April 17	Trenton	April 20
(Mr. Johnson alone)		Baltimore	" 23
Brighton	" 19	(Mr. Johnson alone)	

HORTICULTURAL MEETINGS

A circular letter was addressed to the secretaries of Horticultural Societies throughout the Province, offering to furnish a speaker free of cost, except that incurred for entertainment during the stay of the lecturer. The following meetings were arranged for :—

Lecturer :—A. B. Cutting, St. Catharines, Ont.

Woodstock	April 2	Kingston	April 19
Aylmer	" 4	Smith's Falls	" 20
Port Dover	" 5	Perth	" 21
Brantford	" 6	Lindsay	" 24
Napanee	" 17	Thornbury	" 26
Picton	" 18	Midland	" 27

Lecturer :—Wm. Hunt, O.A.C., Guelph.

Grimsby	April 9	Merritton	April 12
St. Catharines	" 10	Niagara Falls	" 13
Port Dalhousie	" 11		

Lecturer :—Prof. H. L. Hutt, O.A.C., Guelph.

Owen Sound	April 5	Stratford	April 10
Kincardine	" 6	Hespeler	
Seaforth	" 19	Brampton	May 1

Lecturer :—H. S. Peart, O.A.C., Guelph, Ont.

Durham	April 3	Elmira	April 6
Waterloo	" 5		

SPECIAL SEED MEETINGS.

The Dominion and Provincial Departments of Agriculture co-operated in holding Special Seed Meetings as indicated below, from June 15 to 28 inclusive.

LIST OF MEETINGS AND SPEAKERS.

DIVISION 1. Speakers :—Simpson Rennie, Toronto ; L. E. Annis, Scarboro.

Hespeler, Dundee, Waterloo, Embro, Thamesford, Norwich, Burford, Onondaga, Port Rowan, Vittoria, Dutton, Highgate, Blenheim, South Woodslee, Appin, Crediton, Brussels.

DIVISION 2. Speakers :—Anthony Forster, Markham ; D. James, Langstaff.

Claude, Shelburne, Dundalk, Kimberley, Durham, Owen Sound, Meaford, Duntroon, Creemore, Beeton, Palgrave, Cookstown, Barrie, Randolph, Elmvale, Minesing, Bradford.

DIVISION 3. Speakers :—A. J. Reynolds, Scarboro Junction; Geo. Carlaw, Warkworth.

Thistleton, Maple, Manchester, Unionville, Locust Hill, Bethesda, Claremont, Taunton, Port Perry, Uxbridge, Udora, Sutton West, Cannington, Beaverton, Woodville, Little Britain, Warsaw, Norwood, Lindsay, Oakwood, Stouffville.

DIVISION 4. Speakers :—W. S. Fraser, Bradford ; C. W. Nash, Toronto.

Solina, Tyrone, Orono, Millbrook, Baillieboro, Garden Hill, Canton, Cobourg, Warkworth, Hastings, Madoc, Tweed, Frankford, Belleville, Ameliasburg, Newburgh, Stella.

List of Meetings and Speakers.—*Concluded.*

T. G. Raynor, Seed Division, Ottawa, replaced speakers announced above as follows:—L. E. Annis, first three meetings Division 1; D. James, last eight meetings of Division 2; and Geo. Carlaw, last four meetings of Division 3.

The topics dealt with at these meetings are given herewith:

(*a*) The best Method of Producing Pure, Strong Seeds of Clover, Timothy and Alsike, with Special Reference to the Preparation of Seed Bed and Kinds of Seed used.

(*b*) The Cleaning of Clover Seed Crops before being cut.

(*c*) Weeds, and How they Become Introduced on the Farm; The Knowledge of their Nature and Growth an Essential to their Control and Eradication.

(*d*) The Best Method of Improving the Yield and Quality of Pototoes by Seed Selection.

(*e*) The Advantage of Maintaining on a Farm a Special Breeding Plot for Seed Oats, Wheat, Barley and Corn.

(*f*) Soil Cultivation and its Relation to Maintaining and Improving the Vigor and Productiveness of Field Crops.

(*g*) The marketing of Pure Commercial Seed.

(*h*) The Ontario Laws Relative to the Destruction of Noxious Weeds.

As compared with the previous year, a greater interest was exhibited in these meetings, and the attendance was much larger. We are continually receiving from Institute officers, seedsmen and others expressions as to the improvement in the quality of seed produced and the greater care shown by farmers in selecting and purchasing their seeds.

INSTITUTE MEETINGS AND DELEGATES THEREFOR.

REGULAR MEETINGS.

Division 1. H. Jones, Maitland; W. C. Shearer, Bright; Miss G. Gray, Toronto, Jan. 7; Miss L. Shuttleworth, Guelph, Jan. 14, 15, 18 and 19; Miss A. Smith, Hamilton, Jan. 23—25.

1	Kincardine, Town Hall	C. Bruce	January	4
2	Ripley, Township Hall	C. Bruce	"	5
3	Holyrood, Township Hall	S. Bruce	"	7
4	Kintail, Young's Hall	W. Huron	"	8
5	Auburn, Orange Hall	W. Huron	"	9
6	Brussels, Town Hall	E. Huron	"	10
7	Belmore, Foresters' Hall	S. Bruce	"	11
8	Wroxeter, Town Hall	E. Huron	"	12
9	Durham, Town Hall	S. Grey	"	14
10	Hanover, Telford's Hall	S. Grey	"	15
11	Wiarton, Town Hall	N. Bruce	"	16
12	Hepworth, School House	N. Bruce	"	17
13	Tara, Council Chambers	W. Bruce	"	18
14	Port Elgin, Town Hall	W. Bruce	"	19
15	Lakelet, Temperance Hall	Union	"	21
16	Lavery's School House	Union	"	22
17	Acton, Town Hall	Halton	"	23
18	Georgetown, Town Hall	Halton	"	24
19	Hornby, Orange Hall	Halton	"	25
20	McCurdy's	Halton	"	26

Division 2. W. Elliott, Galt; A. E. Sherrington, Walkerton, Jan. 3—11; J. Gardhouse, Highfield, Jan. 12—25; Miss G. Gray, Toronto, Jan. 3 and 9; Miss Agnes Smith, Hamilton, Jan. 12—16.

1	Plattsville, Town Hall	N. Oxford	January	3
2	Atwood, Town Hall	N. Perth	"	4
3	Millbank, Town Hall	N. Perth	"	5
4	Mitchell, Town Hall	S. Perth	"	7
5	St. Mary's, Town Hall	S. Perth	"	8
6	Kintore, Foresters' Hall	N. Oxford	"	9
7	Lambeth, Town Hall	E. Middlesex	"	10
8	Ilderton, Oddfellow's Hall	E. Middlesex	"	11
9	Coldstream, Town Hall	N. Middlesex	"	12
10	Beechwood, Grange Hall	N. Middlesex	"	14
11	Ailsa Craig, Town Hall	N. Middlesex	"	15
12	Parkhill, Town Hall	N. Middlesex	"	16
13	Exeter, Town Hall	S. Huron	"	17
14	Brucefield, Dixon's Hall	S. Huron	"	18
15	Inwood, Orange Hall	E. Lambton	" 19 & 2	8
16	Brigden	W. Lambton	" 22 & 2	1
17	Walker's School House	W. Middlesex	"	23
18	Middlemiss, Village Hall	W. Middlesex	"	24
				5

Division 3. J. F. Lavery, V. S., Sunderland; J. N. Paget, Canboro, Jan. 4—10; J. E. Orr, Fruitland, Jan. 11—24; Miss. I. Rife. Hespeler, Jan. 9—12; Mrs. C. Campbell, Windsor, Jan. 16, 17 and 23.

1	Waterford, Town Hall	N. Norfolk	January	4
2	Boston, Foresters' Hall	N. Norfolk	"	5
3	Delhi, Morgan's Hall	N. Norfolk	"	7
4	Courtland, Town Hall	N. Norfolk	"	8
5	Norwich, Town Hall	S. Oxford	"	9
6	Mt. Elgin, Foresters' Hall	S. Oxford	"	10
7	Aylmer, Opera House	E. Elgin	" 11 &	12
8	Shedden, Morrison's Hall	W. Elgin	"	14
9	West Lorne, Township Hall	W. Elgin	"	15
10	Bridge End, Town Hall	E. Kent	"	16
11	Croton, Town Hall	E. Kent	"	17

REGULAR MEETINGS.—*Continued.*

12	Valetta, Township Hall	W. Kent	January	18
13	Romney, Township Hall	W. Kent	"	19
14	Leamington, Town Hall	S. Essex	"	21 & 22
15	Oldcastle, Town Hall	N. Essex	"	23
16	Belle River, Town Hall	N. Essex	"	24

DIVISION 4. Dr. J. Standish, Walkerton; Jno. C. Shaw, Norwich, Jan. 3—15; Mrs. Lillian Gray Price, Toronto, Jan. 11, 12, 16 and 17. Geo. Carlaw, Warkworth, Jan. 16—26.

1	Sheridan	Halton	January	3
2	Palermo	Halton	"	4
3	Waterdown, Township Hall	N. Wentworth	"	5
4	Freelton, McFarlane's Hall	N. Wentworth	"	7
5	Rockton, Township Hall	N. Wentworth	"	8
6	Burford, Cornish Hall	S. Brant	"	9
7	Ohsweken, Council House	S. Brant	"	10
8	Onondaga, Township Hall	N. Brant	"	11
9	St. George, Mechanic's Hall	N. Brant	"	12
10	Ancester, Town Hall	S. Wentworth	"	14
11	Stoney Creek, Institute Hall	S. Wentworth	"	15
12	Campden, Fry's Hall	Lincoln	"	16
13	St. David's School House	Lincoln	"	17
14	Niagara Falls, S., Forestry Hall	Welland	"	18
15	Willoughby, Town Hall	Welland	"	19
16	Pelham Centre, Town Hall	Monck	"	21
17	Attercliffe, Station, School House	Monck	"	22
18	Cayuga, Town Hall	Haldimand	"	23
19	Hagersville	Haldimand	"	24
20	Vittoria, Lecture Room	S. Norfolk	"	25
21	Langton, Town Hall	S. Norfolk	"	26

DIVISION 5. E. C. Drury, Crown Hill; J. L. Warren, Acton, Jan. 3—16; J.M. McCallum, Shakespeare, Jan. 24 and 25; Miss Smith, Hamilton, Jan. 3, 4, 5 and 9; Miss G. Gray, Toronto, Jan. 10—14; Miss B. Carter, Guelph, Jan. 17—23.

1	Eden Mills, Hall. (afternoon)	S. Wellington	January	3
2	Arkell, School House. (evening)	S. Wellington	"	3
3	S. S. No. 6. (afternoon)	S. Wellington	"	4
4	Aberfoyle, Town Hall. (evening)	S. Wellington	"	4
5	Preston, Town Hall	S. Waterloo	"	5
6	Haysville, Village Hall	S. Waterloo	"	7
7	Waterloo, Town Hall	N. Waterloo	"	8
8	St. Jacob's, Wideman's Hall	N. Waterloo	"	9
9	Glen Allan, Church Basement	W. Wellington	"	10
10	Drayton, Town Hall	W. Wellington	"	11 & 12
11	Moorefield, Township Hall	W. Wellington	"	14
12	Conn, Orange Hall (afternoon)	E. Wellington	"	15
13	Conn, School House (evening)	E. Wellington	"	15
14	Kenilworth, School House	E. Wellington	"	16
15	Annan & Leith, Orange Hall	N. Grey	"	17
16	Strathavon, Hall	N. Grey	"	18
17	Owen Sound, Council Chambers	N. Grey	"	19
18	Kemble, School House. (afternoon)	N. Grey	"	21
19	Brown's School House. (evening)	N. Grey	"	21
20	Kilsyth, Hall	N. Grey	"	22
21	Desboro, Hall. (afternoon)	N. Grey	"	23
22	Chatsworth, Hall. (evening)	N. Grey	"	23
23	Bond Head, Orange Hall	S. Simcoe	"	24
24	Churchill, Orange Hall	S. Simcoe	"	25

DIVISION 6. Dr. J. F. Lavery, Sunderland; Dr. Annie Backus, Aylmer.

1	Bethany, Church Basement	C. Wellington	December	3
2	Metz, Orange Hall	C. Wellington	"	4
3	Ospringe, School House	C. Wellington	"	5
4	Marsville, Anthony's Hall	C. Wellington	"	6
5	Hillsburg, Town Hall	C. Wellington	"	7

REGULAR MEETINGS.—*Continued.*

DIVISION 7. E. C. Drury, Crown Hill; W. F. Stephen, Huntingdon, Que., Dec. 3—18. L. Annis, Scarboro, Nov. 28—Dec. 1; Miss Smith, Nov. 28—Dec. 4.

1	Shelburne, Town Hall	Dufferin	November	28
2	Orangeville, Town Hall	Dufferin	"	29
3	Caledon, Township Hall	Peel	"	30
4	Streetsville, Oddfellows' Hall	Peel	December	1
5	Weston, Dufferin Hall	W. York	"	3
6	Woodbridge, Orange Hall	W. York	"	4
7	Aurora, Town Hall	N. York	"	5
8	Queensville, Soule's Hall	N. York	"	6
9	Agincourt, Temperance Hall	E. York	"	7
10	Stouffville, Council Chambers	E. York	"	8
11	Goodwood, Township Hall	N. Ontario	"	10
12	Sunderland, Township Hall	N. Ontario	"	11
13	Pontypool, Orange Hall (afternoon)	E. Durham	"	12
14	Bethany, Town Hall (evening)	E. Durham	"	12
15	Monaghan S. S. Hall (afternoon)	E. Durham	"	13
16	Millbrook, Town Hall (evening)	E. Durham	"	13
17	Kendal, Foresters' Hall (afternoon)	W. Durham	"	14
18	Orono, Town Hall (evening)	W. Durham	"	14
19	Bowmanville, Town Hall (afternoon)	W. Durham	"	15
20	Hampton, Town Hall (evening)	W. Durham	"	15
21	Myrtle, Temperance Hall	S. Ontario	"	17
22	Pickering, Fire Hall	S. Ontario	"	18

DIVISION 8. H. Glendinning; J. G. Clark, Ottawa; Miss Maddock, Guelph, Nov, 28—Dec. 4.

1	Woodville, Village Hall	W. Victoria	November	28
2	Lindsay, Town Hall	W. Victoria	"	29
3	Bobcaygeon, Town Hall	E. Victoria	"	30
4	Fenelon Falls, Dickon's Hall	E. Victoria	December	1
5	Lakefield, Town Hall	W. Peterboro	"	3
6	Peterboro, City Hall (afternoon)	W. Peterboro	"	4
7	North Monaghan, Town Hall (evening)	W. Peterboro	"	4
8	Norwood, Town Hall	E. Peterboro	"	5
9	Keene, Township Hall	E. Peterboro	"	6
10	Warkworth, Warkworth Hall	E. Northumberland	"	7
11	Hastings	E. Northumberland	"	8
12	Menie, Lamb's Hall	E. Northumberland	"	10
13	Springbrook, Town Hall	N. Hastings	"	11
14	Queensboro	N. Hastings	"	12
15	Tweed, Town Hall	E. Hastings	"	13 & 14

DIVISION 9. T. G. Raynor, Ottawa, Nov. 28—Dec. 5; D. Johnson, Forest, Dec. 7—14; G. Carlaw, Warkworth, Dec. 6—14; T. H. Mason, Straffordville, Nov. 28—Dec. 14; Miss G. Gray, Toronto, Dec. 8 and 10.

Mr. G. G. Publow, Chief Instructor for Eastern Ontario, will attend meetings at Enterprise and Wolfe Island.

1	Joyceville, Joyceville	Frontenac	November	28
2	Wolfe Island, Township Hall	Frontenac	"	29
3	Emerald, Cheese Factory	Amherst Island	"	30
4	Stella, Town Hall	Amherst Island	December	1
5	Napanee, Town Hall	Lennox	"	3
6	Selby, Town Hall	Lennox	"	4
7	Tamworth, Town Hall	Addington	"	5
8	Enterprise, Merrit's Hall	Addington	"	6
9	Cannifton, Town Hall	E. Hastings	"	7
10	Wallbridge, Town Hall	W. Hastings	"	8
11	Frankford, Curry's Hall	W. Hastings	"	10
12	Bloomfield Town Hall	Pr. Edward	"	11
13	Ameliasburg, Town Hall	Pr. Edward	"	12
14	Grafton, Grafton Hall	W. Northumberland	"	13
15	Harwood, Boyle's Hall	W. Northumberland	"	14

REGULAR MEETINGS.—*Continued.*

DIVISION 10. T. McMillan, Seaforth, Nov. 28—Dec. 13 ; J. N. Paget, Canboro, Nov. 28—Dec. 15. One of the Dairy Instructors will attend on Dec. 14 and 15 ; Miss L. Rose, Guelph, Dec. 14, 15.

1	McDonald's Corners	N. Lanark	November	28
2	Lanark Village	N. Lanark	"	29
3	Perth, Town Hall	S. Lanark	"	30
4	Smith's Falls, Town Hall	S. Lanark	December	1
5	Merrickville, Town Hall	N. Leeds	"	3
6	Kemptville. Town Hall	N. Leeds	"	4
7	Spencerville, Town Hall	S. Grenville	"	5
8	North Augusta	S. Grenville	"	6
9	Lyn, School House	Brockville	"	7
10	Athens, Town Hall	Brockville	"	8
11	Elgin, Town Hall	S. Leeds	"	10
12	Gananoque, Town Hall	S. Leeds	"	11
13	Parham, I.O.O.F.	C. Frontenac	"	12
14	Mountain Grove, Town Hall	C. Frontenac	"	13
15	Brinston's Corners	Dundas	"	14
16	North Williamsburg	Dundas	"	15

DIVISION 11. Dr. H. G. Reed, Georgetown ; J. H. Echlin, Balderson ; Miss Rose, Guelph, Dec. 18 and 19.

1	Aultsville	Stormont	November	2
2	South Branch, Patrons' Hall	Cornwall	"	39
3	Cornwall Centre, Township Hall	Cornwall	December	
4	Lancaster, Public Hall	Glengarry	"	0
5	Martintown, St. Andrew's Hall	Glengarry	"	1
6	Greenfield, Town Hall	Glengarry	"	3
7	Varkleek Hill, Town Hall	Prescott	"	6 & 7
8	Moose Creek	Stormount	"	5
9	Rockland, Town Hall	Russell	"	10 & 11
10	Vernon, Orange Hall	Russell	"	12
11	Bell's Corners	Carleton	"	13
12	Galetta, White's Hall	Carleton	"	14
13	Renfrew, Temperance Hall	S. Renfrew	"	15 & 16
14	Douglas, Temperance Hall	N. Renfrew	"	17
15	Osceola, School House	N. Renfrew	"	18
				9

DIVISION 12. W. S. Fraser, Bradford ; H. Grose, Lefroy.

1	Gravenhurst, Town Hall (afternoon)	S. Muskoka	January	3
2	Alport, School House (evening)	S. Muskoka	"	3
3	Reay, School House (afternoon)	S. Muskoka	"	4
4	Germania, School House (evening)	S. Muskoka	"	4
5	Fraserburg, School House (afternoon)	S. Muskoka	"	5
6	Uffington, Crosier's Hall (evening)	S. Muskoka	"	5
7	Baysville, Town Hall (afternoon & evening)	S. Muskoka	"	7
8	Bardsville, School House (afternoon)	S. Muskoka	"	8
9	Falkenburg, School House (evening)	S. Muskoka	"	8
10	Port Carling, Town Hall	Port Carling	"	9
11	Brackenrig, School House	Port Carling	"	10
12	Windermere, Atkin's Hall (afternoon)	C. Muskoka	"	11
13	Ufford, School House (evening)	C. Muskoka	"	11
14	Raymond, Orange Hall (afternoon)	C. Muskoka	"	12
15	Utterson, Town Hall (evening)	C. Muskoka	"	12
16	Esson's School House (afternoon)	C. Muskoka	"	14
17	Allansville, Hall (evening)	C. Muskoka	"	14

SPECIAL SERIES—NORTH HASTINGS.

W. F. Kydd, Simcoe ; Miss I. Rife, Hespeler.

St. Ola (aft. and eve.)	November	26
The Ridge, School House (aft. and eve.)	"	27
Paudash Lake, or Wood, P.O., School House (aft. and eve.)	"	28
L'Amable, Town Hall (aft. and eve.)	"	29
Turriff (aft. and eve.)	"	30
Bronson, Mr. H. Weese's place (afternoon)	December	1
McArthur's Mills, McArthur's Hall (aft. and eve.)	"	3
Fort Stewart, Forester's Hall (aft. and eve.)	"	4
New Carlow, School House (aft. and eve.)	"	5
Hybla, School House (afternoon)	"	6
Maynooth, Town Hall (aft. and eve.)	"	7
Bancroft, Town Hall (aft. and eve.)	"	8

SUPPLEMENTARY MEETINGS.

Division 1. W. F. Kydd, Simcoe ; J. M. McCallum, Shakespeare, Feb. 15—26 ; Miss B. Maddock, Guelph, Feb. 4 and 8 ; Dr. Annie Backus, 25 and 26.

1	Fordwich, Foresters' Hall	E. Huron	February	4
2	Bluevale, Foresters' Hall	E. Huron	"	5
3	Jamestown, Victoria Hall	E. Huron	"	6
4	Molesworth, Orange Hall	E. Huron	"	7
5	Ethel, Town Hall	E. Huron	"	8
6	Walton, A.O.U.W. Hall	E. Huron	"	9
7	Harlock, School House	E. Huron	"	11
8	Winthrop, Scarlett's Hall	E. Huron	"	12
9	St. Columbus, School House	E. Huron	"	13
10	Fowlers, School House	E. Huron	"	14
11	Londesborough, Brown's Hall	W. Huron	"	15
12	Holmesville, Wilson's Hall	W. Huron	"	16
13	Benmiller, Foresters' Hall	W. Huron	"	18
14	Goderich, Temperance Hall	W. Huron	"	19
15	Nile, Orange Hall	W. Huron	"	20
16	St. Helen's, Mechanics' Institute Hall	W. Huron	"	21
17	Bervie, Township Hall	C. Bruce	"	22
18	Glamis, Methodist Church	C. Bruce	"	23
19	Paisley, Town Hall	C. Bruce	"	25
20	Gillies' Hill, Township Hall	C. Bruce	"	26

Division 2. Dr. H. G. Reed, Georgetown ; D. James, Langstaff, Jan. 4 and 5 ; G. Barbour, Crosshill, Jan. 23—Feb. 7 ; Miss B. Miller, Guelph, Jan. 7—22.

1	Meaford, Town Hall	N. Grey	January	4
2	Snyder's School House	N. Grey	"	5
3	Thornbury, Town Hall	C. Grey	"	7
4	Heathcote, Orange Hall	C. Grey	"	8
5	Ravenna, Town Hall	C. Grey	"	9
6	Kimberley, Union Hall	C. Grey	"	10
7	Temple Hill, Pres. Ch. Basement	C. Grey	"	11
8	Walter's Falls, A.O.U.W. Hall	C. Grey	"	12
9	Holland Centre, Town Hall	C. Grey	"	14
10	Markdale, Council Chamber	C. Grey	"	15
11	Priceville, Watson's Hall	C. Grey	"	16
12	Hopeville, Allan's Hall	C. Grey	"	17
13	Dundalk, Town Hall	C. Grey	"	18
14	Badgeros, Orange Hall	C. Grey	"	19
15	Maxwell, Orange Hall (aft.)	C. Grey	"	21
16	Feversham (Judging Class in A.M.)	C. Grey	"	22
17	Midhurst, Patron's Hall	C. Simcoe	"	23
18	Minesing, Workmen's Hall	C. Simcoe	"	24
19	Phelpston, Murphy's Hall	C. Simcoe	"	25
20	New Flos, School House	C. Simcoe	"	26

SUPPLEMENTARY MEETINGS.—*Continued,*

21	Allanwood, Church Basement	C. Simcoe	January 28
22	Wyevale, Orange Hall	C. Simcoe	" 29
23	Wyebridge, Orange Hall	C. Simcoe	" 30
24	LeFaivre's Corners, School House	C. Simcoe	" 31
25	Lefontaine, Foresters' Hall	C. Simcoe	February 1
26	Vasey, Orange Hall	C. Simcoe	" 2
27	New Lowell, Town Hall	W. Simcoe	" 4
28	Stayner, Stewart's Hall	W. Simcoe	" 5
29	Orillia, Council Chamber	E. Simcoe	" 6 & 7

DIVISION 3. Wm. Elliott, Galt; J. L. Warren, Acton, Feb. 1—12; Jno. Buchanan, B.S.A., Guelph, Feb. 13—23; Miss G. Gray, Toronto, Feb. 13, 15, 18, 19 and 21.

1	Lion's Head, Town Hall	N. Bruce	February 1
2	Spry's School House	N. Bruce	" 2
3	Mar, School House	N. Bruce	" 4
4	Allenford, Orange Hall	W. Bruce	" 5
5	Burgoyne, Church Vestry (aft.)	W. Bruce	" 6
6	McLennan's School House (eve.)	W. Bruce	" 6
7	Underwood, Town Hall	W. Bruce	" 7
8	Tiverton, Town Hall	W. Bruce	" 8
9	Lucknow, Town Hall	S. Bruce	" 9
10	Teeswater	S. Bruce	" 11
11	Mildmay, Town Hall	S. Bruce	" 12
12	Walkerton, Town Hall	S. Bruce	" 13
13	Cargill, Public Library	S. Bruce	" 14
14	Elmwood, Wildfang's Hall	S. Grey	" 15
15	Ayton, Doersam's Hall	S. Grey	" 16
16	Holstein, Agricultural Hall	S. Grey	" 18
17	Dromore, Russell Hall	S. Grey	" 19
18	Harriston, Town Hall	Union	" 20
19	Clifford, Town Hall	Union	" 21
20	Drew, Temperance Hall	Union	" 22
21	Teviotdale, Forester's Hall	Union	" 23

DIVISION 4. Wm. Reid, Lucan, Feb. 1—7; Dr. J. F. Lavery, Sunderland, Feb. 8—22; W. S. Fraser, Bradford, Feb. 8—22; Mrs. L. Gray Price, Toronto, Feb. 1—7; Miss Smith, Hamilton, Feb. 19 and 20.

1	Lobo, Masonic Hall	N. Middlesex	February 1
2	Granton, Harmony Hall	N. Middlesex	" 2
3	Moonesville, Maccabee's Hall	N. Middlesex	" 4
4	West McGillivray, Town Hall	N. Middlesex	" 5
5	Greenway, Wilson's Hall	N. Middlesex	" 6
6	Sylvan, Maccabee's Hall	N. Middlesex	" 7
7	Thedford, McKenzie's Hall	E. Lambton	" 8
8	Camlachie, Bridge's Hall	E. Lambton	" 9
9	Petrolea, Town Hall	W. Lambton	" 11
10	Oakdale, School House	W. Lambton	" 12
11	Rutherford, Hall	W. Lambton	" 13
12	Beecher, Foresters' Hall	W. Lambton	" 14
13	Wilkesport, Hamilton's Hall	W. Lambton	" 15
14	Courtwright, Stewart's Hall	W. Lambton	" 16
15	Sarnia, Town Hall	W. Lambton	" 18
16	Wyoming, Butler's Hall	E. Lambton	" 19
17	Shetland, Peter's Hall	E. Lambton	" 20
18	Alvinston, Code's Hall	E. Lambton	" 21
19	Warwick, Orange Hall	E. Lambton	" 22

DIVISION 5. Major Sheppard, Queenston; J. Gardhouse, Highfield, Feb. 1—8; Dr. H. G. Reed, Georgetown, Feb. 9—21; Miss B. Maddock, Guelph, Feb. 5 and 6.

1	Gowanstown, Township Hall	N. Perth	February 1
2	Carthage, Forester's Hall	N. Perth	" 2
3	Rostock, Town Hall	N. Perth	" 4
4	Milverton, Groch's Hall	N. Perth	" 5
5	Hampstead, School House	N. Perth	" 6

SUPPLEMENTARY MEETINGS.—*Continued.*

6	Shakespeare, Temperance Hall	N. Perth	February	7
7	Tavistock, Public Hall	S. Perth	"	8
8	Sebringville, Foresters' Hall	S. Perth	"	9
9	Fullerton, Township Hall	S. Perth	"	11
10	Staffa, Public Hall	S. Perth	"	12
11	Kirkton, Aberdeen Hall	S. Perth	"	13
12	Elmville, Township Hall	S. Huron	"	14
13	Crediton, Township Hall	S. Huron	"	15
14	Grand Bend, Public Hall	S. Huron	"	16
15	Zurich, Township Hall	S. Huron	"	18
16	Hensall, Willar's Hall	S. Huron	"	19
17	Strong's Hall, Tuckersmith Tp	S. Huron	"	20
18	Bayfield, Public Hall	S. Huron	"	21

DIVISION 6. Dr. J. Standish, Walkerton; J. N. Paget, Canboro; Miss I. Rife, Hespeler, Feb. 1—9.

1	Princeton, Town Hall	N. Oxford	February	1
2	Drumbo, Town Hall	N. Oxford	"	2
3	Innerkip, Forester's Hall	N. Oxford	"	4
4	Cassel, Cheese Factory	N. Oxford	"	5
5	Hickson, Foresters' Hall	N. Oxford	"	6
6	Braemar, Town Hall	N. Oxford	"	7
7	Embro, Town Hall	N. Oxford	"	8
8	Thamesford, Foresters' Hall	N. Oxford	"	9
9	Crampton, Town Hall	E. Middlesex	"	11
10	Gladstone, School House	E. Middlesex	"	12
11	Wilton Grove, School House	E. Middlesex	"	13
12	Byron, Town Hall	E. Middlesex	"	14
13	Denfield, Town Hall	E. Middlesex	"	15
14	The Grove, School House	E. Middlesex	"	16
15	Thorndale, Hardie's Hall	E. Middlesex	"	18
16	Wellburn, German's Hall	E. Middlesex	"	19
17	Mt. Brydges, Town Hall	W. Middlesex	"	20
18	Appin, Town Hall	W. Middlesex	"	21
19	Wardsville Village, Town Hall	W. Middlesex	"	22
20	Glencoe, Town Hall	W. Middlesex	"	23

DIVISION 7. W. C. Shearer, Bright, Feb. 1—March 2; D. Johnson, Forest, Feb. 1—March 2. Miss B. Miller, Guelph, Feb. 1—14; Mrs. C. Campbell, Windsor, Feb. 28.

1	Corinth, Royal Templars' Hall	E. Elgin	February	1
2	Mount Salem, Royal Templars' Hall	E. Elgin	"	2
3	Sparta, Templars' Hall	E. Elgin	"	4
4	Mapleton, School House	E. Elgin	"	5
5	Middlemarch, Grange Hall	W. Elgin	"	6
6	Dutton, Town Hall	W. Elgin	"	7
7	Rodney, Township Hall	W. Elgin	"	8
8	Highgate, Township Hall	E. Kent	"	9
9	Ridgetown, Township Hall	E. Kent	"	11
10	Blenheim	E. Kent	"	12
11	Kent Bridge, R. B. Hall	E. Kent	"	13
12	Thamesville, Town Hall	E. Kent	"	14
13	Eberts, Township Hall	W. Kent	"	15
14	Tupperville, Church Hall	W. Kent	"	16
15	Bear Creek, School House	W. Kent	"	18
16	Union, Union Hall	W. Kent	"	19
17	Wheatley, Gibson's Hall	W. Kent and S. Essex	"	20 & 21
18	Kingsville, Town Hall	S. Essex	"	22
19	Harrow, Town Hall	S. Essex	"	23
20	Amherstburg, Town Hall	S. Essex	"	25
21	Essex, Town Hall	S. Essex	"	26
22	School Section No. 8	N. Essex	"	27
23	Woodslee, St. Lawrence Hall	N. Essex	"	28
24	Comber, Town Hall	N. Essex	March	1
25	Tecumseh, St. Jean's Hall	N. Essex	"	2

SUPPLEMENTARY MEETINGS.—*Continued.*

DIVISION 8. E. C. Drury, Crown Hill, Feb. 1-25 : A. E. Sherrington, Walkerton, Feb. 1—23; J. Buchanan, B.S.A., Guelph, Feb. 26—March 8 ; W. S. Fraser, Bradford, Feb. 25—March 8 ; Dr. Annie Backus, Aylmer, March 1—8.

1	Falkland, Hulbert Hall	S. Brant	February	1
2	Hatchley, School House	S. Brant	"	2
3	Cathcart, Foresters' Hall	S. Brant	"	4
4	Scotland, Foresters' Hall	S. Brant	"	5
5	Burtch, School House	S. Brant	"	6
6	Mt. Pleasant, School House	S. Brant	"	7
7	Caledonia, Association Hall	Haldimand	"	8
8	Cantield, McDonald's Hall	Haldimand	"	9
9	York, Town Hall	Haldimand	"	11
10	Clanbrassil, School House	Haldimand	"	12
11	Bingham Road, No. 3 School House	Haldimand	"	13
12	Rainham Centre, Town Hall	Haldimand	"	14
13	Fisherville, Town Hall	Haldimand	"	15 & 16
14	Cheapside, Town Hall	Haldimand	"	18
15	Nanticoke, Town Hall	Haldimand	"	19
16	Port Dover, Town Hall	S. Norfolk	"	20
17	Port Rowan, Town Hall	S. Norfolk	"	21
18	Fairground, Town Hall	S. Norfolk	"	22
19	Maybee, School House	N. Norfolk	"	23
20	Simcoe, Council Chamber	N. Norfolk	"	25
21	Tyrrell, Tyrrell Hall	N. Norfolk	"	26
22	Windham Centre, Town Hall	N. Norfolk	"	27
23	Kelvin, Kelvin Hall	N. Norfolk	"	28
24	Tillsonburg, Council Chambers	S. Oxford	March	1
25	Brownsville, Methodist Church	S. Oxford	"	2
26	Springford, Town Hall	S. Oxford	"	4
27	Burgessville, Oddfellows' Hall	S. Oxford	"	5
28	Oxford Centre, Town Hall	S. Oxford	"	6
29	Beachville, Town Hall	S. Oxford	"	7
30	Folden's, Folden's Hall	S. Oxford	"	8

DIVISION 9. E. Lick, Oshawa ; R. S. Stevenson, Ancaster, Feb. 1—7, and Feb. 20—March 4 ; J. L. Hilborn, Leamington, Feb. 8—19 ; Miss B. Maddock, Guelph, Feb. 9—14 ; Miss A. Smith, Hamilton, Feb. 26.

1	Jerseyville, Waite's Hall	S. Wentworth	February	1
2	Carluke, School House	S. Wentworth	"	2
3	Glanford, Town Hall	S. Wentworth	"	4
4	Hannon, Hall	S. Wentworth	"	5
5	Binbrook, Town Hall	S. Wentworth	"	6
6	Tapleytown, Old Church	S. Wentworth	"	7
7	Winona, Institute Hall	S. Wentworth	"	8
8	Grimsby, Society Hall	Lincoln	"	9
9	Beamsville, Town Hall	Lincoln	"	11
10	Jordan Station, Town Hall	Lincoln	"	12
11	Grantham, Orange Hall	Lincoln	"	13
12	Virgil, Public Hall	Lincoln	"	14
13	Allanburg, Town Hall	Welland	"	15
14	Crowland, Town Hall	Welland	"	16
15	Welland, Court House	Welland	"	18
16	Stevensville, Jenson's Hall	Welland	"	19
17	Brown Road, School House	Welland	"	20
18	Humberstone, Town Hall	Welland	"	21
19	Dunnville, Town Hall	Monck	"	22
20	Marshville, Town Hall	Monck	"	23
21	Wellandport, Misener's Hall	Monck	"	25
22	Smithville, Brant's Hall	Monck	"	26
23	Lynden, Kivell's Hall	N. Wentworth	"	27
24	Sheffield	N. Wentworth	"	28
25	Kirkwall, School House	N. Wentworth	March	1
26	Carlisle, Orange Hall	N. Wentworth	"	2
27	Millgrove	N. Wentworth	"	4

SUPPLEMENTARY MEETINGS.—*Continued.*

DIVISION 10. D. Anderson, Orillia; Feby., 1—16, T. McMillan, Seaforth, Feb. 18—March 1; Miss Agnes Smith, Feb. 1, —9, 11, 14, 15; Miss B. Maddock, Guelph, Feb. 22. Miss G. Gray, Toronto, Feby., 26—Mar., 1

1	Wellesley, Opera House	N. Waterloo	February	1
2	Crosshill, Township Hall	N. Waterloo	"	2
3	Linwood, Spahr's Hall	N. Waterloo	"	4
4	Hawkesville, Fowell's Hall	N. Waterloo	"	5
5	Heidelburg, Steiss Hall	N. Waterloo	"	6
6	Conestogo, Township Hall	N. Waterloo	"	7
7	Berlin, Library Hall	N. Waterloo	"	8
8	Bloomingdale, King Edward	N. Waterloo	"	9
9	Ayr, McGeorge's Hall	S. Waterloo	"	11
10	Branchton, Forester's Hall	S. Waterloo	"	12
11	Galt, Town Hall	S. Waterloo	"	13
12	Hespeler, Temperance Hall	S. Waterloo	"	14
13	Breslau, Old Church	S. Waterloo	"	15
14	Baden, Baden Hall	S. Waterloo	"	16
15	New Hamburg, Fell Hall	S. Waterloo	"	18
16	Philipsburg, Hall	S. Waterloo	"	19
17	St. Agatha, Hall	S. Waterloo	"	20
18	Mannheim, Hall	S. Waterloo	"	21
19	New Dundee, Hall	S. Waterloo	"	22
20	Roseville, Hall	S. Waterloo	"	23
21	Strasburg, Hall	S. Waterloo	"	25
22	Glenmorris, Hall (afternoon)	N. Brant	"	26
23	Mau's School House (evening)	N. Brant	"	26
24	Moyle's School House (afternoon)	N. Brant	"	27
25	White School House (evening)	N. Brant	"	27
26	Cainsville, Orange Hall	N. Brant	"	28
27	Langford, School House (afternoon)	N. Brant	March	1
28	Mulligan's School House (evening)	N. Brant	"	1

DIVISION 11. T. G. Raynor, Ottawa; J. W. Clark, Cainsville, Feb. 4—March 2; H. Glendinning, Manilla, Feb. 1—2; Dr. Annie Backus, Aylmer, Feb. 1—11; Miss I. Rife, Hespeler, Feb. 12—20.

1	Grand Valley	E. Wellington	February	1
2	Arthur, Town Hall	E. Wellington	"	2
3	Damascus, Township Hall	E. Wellington	"	4
4	Mt. Forest, Allan's Hall	E. Wellington	"	5
5	Cedarville, Orange Hall	E. Wellington	"	6
6	Farewell, School House	E. Wellington	"	7
7	Palmerston, Town Hall	W. Wellington	"	8
8	Rothesay, Temperance Hall	W. Wellington	"	9
9	Alma, Town Hall	W. Wellington	"	11
10	Commock, School House	C Wellington	"	12
11	Ennottville, Mechanics' Hall	C. Wellington	"	13
12	Belwood, Town Hall	C. Wellington	"	14
13	Orton, Town Hall	C. Wellington	"	15
14	Erin, Town Hall	C. Wellington	"	16
15	Adjala, Sloan's Hall	S. Simcoe	"	18
16	Beeton, Town Hall	S. Simcoe	"	19
17	Thornton, Orange Hall	S. Simcoe	"	20
18	Everett, Orange Hall	W. Simcoe	"	21
19	Creemore, Leonard's Hall	W. Simcoe	"	22
20	Duntroon, S. O. S.	W. Simcoe	"	23
21	Singhampton, Grant's Hall	W. Simcoe	"	25
22	Nottawa, Orange Hall West	W. Simcoe	"	26
23	Oro Station, School House	E. Simcoe	"	27
24	Edgar, Temperance Hall	E. Simcoe	"	28
25	Price's Corners, Temperance Hall	E. Simcoe	March	1
26	Moonstone, Orange Hall	E. Simcoe	"	2

DIVISION 12. John Campbell, Woodville; J. G. Foster, Myrtle Station, Jan. 4—24; G. C. Caston, Craighurst, Jan. 25—Feb. 5; Miss S. Campbell, Brampton, Jan. 12 and 14; Miss I. Rife, Hespeler, Jan. 15—23.

1	Jessopville, Church Hall (afternoon)	Dufferin	January	4
2	Riverview (evening)	Dufferin	"	4
3	Honeywood, Chosen Friends' Hall	Dufferin	"	5
4	Horning's Mills, Workmen's Hall	Dufferin	"	7

SUPPLEMENTARY MEETINGS.—*Continued.*

5	Perm, Orange Hall	Dufferin	January	8
6	Relessey, Orange Hall	Dufferin	"	9
7	Glen Cross (afternoon)	Dufferin	"	10
8	Camilla, Harshaw's Hall (evening)	Dufferin	"	10
9	Laurel, Township Hall	Dufferin	"	11
10	Alton, Science Hall	Peel	"	12
11	Cheltenham	Peel	"	14
12	Brampton	Peel	"	15
13	Churchville	Peel	"	16
14	Malton, Temperance Hall	Peel	"	17
15	Tullamore, Town Hall	Peel	"	18
16	Mono Road, Society Hall	Peel	"	19
17	Bolton, Town Hall	Peel	"	21
18	Kleinburg, Temperance Hall	W. York	"	22
19	Maple, Masonic Hall	W. York	"	23
20	Elia, Forester's Hall	W. York	"	24
21	Islington, Township Hall	W. York	"	25
22	Laskey, Temperance Hall	W. York	"	26
23	Thornhill, Victoria Hall	E. York	"	28
24	Wexford, Methodist Church	E. York	"	29
25	Box Grove, Forester's Hall	E. York	"	30
26	Victoria Square, Public Hall	E. York	"	31
27	Schomberg, Temperance Hall	N. York	February	1
28	Kettleby, Temperance Hall	N. York	"	2
29	Mt. Albert, Town Hall	N. York	"	4
30	Sutton West, Sheppard's Hall	N. York	"	5

DIVISION 13. T. G. Raynor, Ottawa ; W. J. Lennox, B.S.A., Newton Robinson, Jan. 2—10 ; W. F. Stephen, Huntingdon, Que., Jan. 11—18 ; A. E. Sherrington, Walkerton, Jan. 19—29 ; Miss G. Grey, Toronto, Jan. 17.

1	Altona, School House	N. Ontario	January	2
2	Uxbridge, Town Hall	N. Ontario	"	3
3	Zephyr, Public Hall	N. Ontario	"	4
4	Udora, Orange Hall	N. Ontario	"	5
5	Cannington, Village Hall	N. Ontario	"	7
6	Beaverton, Alexander's Hall	N. Ontario	"	8
7	Brechin, McGrath's Hall	N. Ontario	"	9
8	Udney, Orange Hall	N. Ontario	"	10
9	Oakwood, Township Hall	W. Victoria	"	11
10	Little Britain, Temperance Hall	W. Victoria	"	12
11	Valentia, Temperance Hall	W. Victoria	"	14
12	Omemee, Opera House	E. Victoria	"	15
13	Dunsford, Old Church	E. Victoria	"	16
14	Cambray, Tamlin's Hall	E. Victoria	"	17
15	Burnt River, Orange Hall	E. Victoria	"	18
16	Bethany, Town Hall (afternoon)	E. Durham	"	19
17	Manvers Station (evening)	E. Durham	"	19
18	Millbrook, Town Hall	E. Durham	"	21
19	Cavanville, Old Church (evening)	E. Durham	"	22
20	Garden Hill, Orange Hall	E. Durham	"	23
21	Canton, Sons of England Hall	E. Durham	"	24
22	Newtonville (afternoon)	W. Durham	"	25
23	Newcastle (evening)	W. Durham	"	25
24	Orono	W. Durham	"	26
25	Solina	W. Durham	"	28
26	Nestleton	W. Durham	"	29

DIVISION 14. J. W. Clark, Cainsville; D. C. Anderson, Orillia, Jan. 4—30 ; J. W. Widdifield, Uxbridge, Jan. 31—Feb. 1 ; Mrs. Wm. Purves, Columbus, Jan. 11—21 ; Miss G. Gray, Toronto, Jan. 4, 9, 25, 26,28, 29—Feb. 1.

1	Lakehurst, Town Hall (afternoon)	W. Peterboro	January	4
2	Hall's Bridge, School House (evening)	W. Peterboro	"	4
3	Selwyn, Temperance Hall	W. Peterboro	"	5
4	Ennismore, Town Hall	W. Peterboro	"	7
5	4th Line Smith, Orange Hall	W. Peterboro	"	8
6	Stewarts, Union Hall	W. Peterboro	"	9
7	Douro, St. Patrick's Hall	E. Peterboro	"	10

SUPPLEMENTARY MEETINGS—*Continued.*

8	Warsaw, Township Hall	E. Peterboro	January	11
9	Havelock, Town Hall	E. Peterboro	"	12
10	Westwood, Township Hall	E. Peterboro	"	14
11	Consecon, Masonic Hall (afternoon)	Prince Edward	"	15
12	Wellington, Town Hall (evening)	Prince Edward	"	15
13	Demorestville, Town Hall	Prince Edward	"	16
14	Cressy, Town Hall (afternoon)	Prince Edward	"	17
15	Wanpoos, Town Hall (evening)	Prince Edward	"	17
16	Milford, Town Hall	Prince Edward	"	18
17	Cherry Valley, Town Hall (afternoon)	Prince Edward	"	19
18	West Lake, School House (evening)	Prince Edward	"	19
19	Wooler, Town Hall	E. Northumberland	"	21
20	Brighton, Town Hall	E. Northumberland	"	22
21	Colborne, Temperance Hall	E. Northumberland	"	23
22	Castleton, Town Hall	E. Northumberland	"	24
23	Roseneath, Township Hall	W. Northumberland	"	25
24	Baltimore, Chapman's Hall	W. Northumberland	"	26
25	Bissells, School House	W. Northumberland	"	28
26	Columbus, Town Hall	S. Ontario	"	29
27	Whitby, Council Chambers	S. Ontario	"	30
28	Kinsale, Temperance Hall	S. Ontario	"	31
29	Greenbank, Temperance Hall	S. Ontario	February	1

DIVISION 15. W. F. Kydd, Simcoe, Jan. 3–Feb. 1; T. Mason, Straffordville; W. J. Kerr, City View, Feb. 2—7; Miss S. Campbell, Brampton, Jan. 22, 23, 25 and 28.

1	Bath, Town Hall	Lennox	January	3
2	Sillsville, Town Hall	Lennox	"	4
3	Adolphustown, Town Hall	Lennox	"	5
4	Odessa, Town Hall	Lennox	"	7
5	Wilton, Grange Hall	Lennox	"	8
6	Switzerville, School House	Lennox	"	9
7	Newburgh, Finkle's Hall	Addington	"	10
8	Centreville, Town Hall	Addington	"	11
9	Madoc, Town Hall	N. Hastings	"	12
10	Eldorado, Town Hall	N. Hastings	"	14
11	Marmora, Town Hall	N. Hastings	"	15
12	Ivanhoe, Orange Hall	N. Hastings	"	16
13	Moira, Town Hall	N. Hastings	"	17
14	Stirling, Foresters' Hall	N. Hastings	"	18
15	Turners' School House	W. Hastings	"	19
16	Harder's School House	W. Hastings	"	21
17	Gilbert's School House	W. Hastings	"	22
18	Foxboro, Friends' Hall	E. Hastings	"	23
19	Plainfield, Orange Hall	E. Hastings	"	24
20	Melrose, Town Hall	E. Hastings	"	25
21	Marysville, School House	E. Hastings	"	26
22	Clazie's School House	E. Hastings	"	28
23	Cataraqui, Township Hall	Frontenac	"	29
24	Glenburnie, Orange Hall	Frontenac	"	30
25	Sunbury, Township Hall	Frontenac	"	31
26	Sydenham, Township Hall	Frontenac	February	1
27	Piccadilly, Town Hall	C. Frontenac	"	2
28	Salem, School House (afternoon)	C. Frontenac	"	4
29	Fermoy, Town Hall (evening)	C. Frontenac	"	4
30	Newboro, Town Hall	Leeds	"	5
31	Delta, Town Hall	Leeds	"	6
32	Seeley's Bay, Select Knight's Hall	Leeds	"	7

DIVISION 16. C. W. Nash, 94 Lee Ave., Toronto, Jan. 3—30; A. C. Hallman, Breslau, Jan. 3—30; Dr. Annie Backus, Aylmer, Jan. 15—18.

1	Mallorytown, Odd Fellow's Hall	Brockville	January	3
2	Caintown, Pres. Church Vestry	Brockville	"	4
3	Addison, Ashwood Hall	Brockville	"	5
4	New Dublin, Township Hall	Brockville	"	7
5	Stone's Cors., E. McKim's Barn (afternoon)	S. Grenville	"	8
6	Stone's Cors., School House (evening)	S. Grenville	"	8
7	Charlesville, Jno. Carson's Barn (afternoon)	S. Grenville	"	9

SUPPLEMENTARY MEETINGS.—*Concluded.*

8	Maynard, Church Basement (evening)	S. Grenville	January	9
9	Roebuck, R. Cornell's Barn (afternoon)	S. Grenville	"	10
10	Roebuck, Orange Hall (evening)	S. Grenville	"	10
11	Ventnor, School House	S. Grenville	"	11
12	Shanley, Workman's Hall	S. Grenville	"	12
13	Mainsville, School House	S. Grenville	"	14
14	S. Mountain	Dundas	"	15
15	Winchester	Dundas	"	16
16	Winchester Springs	Dundas	"	17
17	Chesterville	Dundas	"	18
18	Moulinette, Church	Cornwall	"	19
19	Northfield, Arbuthnot's Hall	Cornwall	"	21
20	Apple Hill, Temperance Hall	Glengarry	"	22
21	Maxville, Public Hall	Glengarry	"	23
22	McCrimmon, Public Hall	Glengarry	"	24
23	St. Eugene, Town Hall	Prescott	"	25
24	Plantagenet, Town Hall	Prescott	"	26
25	Leonard, Town Hall	Russell	"	28
26	Russell, Town Hall	Russell	"	29
27	Casselman, Town Hall	Russell	"	30

DIVISION 17. H. Glendinning, Manilla; R. S. Stevenson, Ancaster.

1	Toledo, Town Hall	N. Leeds and Grenville	January	3
2	Easton's Corners, Methodist Church	N. Leeds and Grenville	"	4
3	Bishop's Mills, Temperance Hall	N. Leeds and Grenville	"	5
4	Heckston, School House	N. Leeds and Grenville	"	7
5	Burritt's Rapids, Victoria Hall	N. Leeds and Grenville	"	11
6	North Gower, Town Hall	Carleton	"	12
7	Manotick, Harmony Hall	Carleton	"	14
8	City View, School House	Carleton	"	15
9	South March	Carleton	"	16
10	Stittsville, Harton's Hall	Carleton	"	17
11	Munster, Temperance Hall	Carleton	"	18
12	Glasgow, Davis Hall	S. Renfrew	"	19
13	Admaston, Temperance Hall	S. Renfrew	"	21
14	Scotch Bush, School House	S. Renfrew	"	22
15	Alice Tp., Cochrane's School House	N. Renfrew	"	23
16	Greenwood, Temperance Hall	N. Renfrew	"	24
17	Cobden, Town Hall	S. Lanark	"	25
18	Drummond, Town Hall	S. Lanark	"	26
19	Balderson, School House	S. Lanark	"	28
20	Harper, Town Hall	S. Lanark	"	29
21	Maberley, Town Hall	S. Lanark	"	30

SPEAKERS AND SUBJECTS.

ANDERSON, DUNCAN C., Orillia.—Mr. Anderson, a native Scotchman, came to this country at an early age, and afterwards settled on a bush farm in Simcoe County, which he cleared with his own hands, and by dint of hard labor and well thought out plans, has succeeded in putting it into first-class condition. Mr. Anderson has paid special attention to the production of beef cattle and bacon hogs, and is an authority in the selection of heavy horses. He is a first-class judge of the classes of stock indicated in his list of subjects. Not only has he done regular Institute work in this Province for a number of years, but has been one of the Institute speakers sent out by the Dominion Department of Agriculture to do work in other Provinces, having visited all sections of the Dominion in which Institute work has been regularly done.

SUBJECTS: "Soil Cultivation and Rotation of Crops," "Clover as a Fertilizer," "Manure, its Care and Application," "Cattle Raising," "The Breeding of Heavy Horses," "Hog Breeding and Feeding," Evening: "Farming as an occupation.'

ANNIS, L. E., Scarboro.—Mr. Annis was president of the East York Farmers' Institute for some time, and in this capacity, he and his secretary organized the Seed Fairs, which are now becoming general as an adjunct in Farmers' Institute work throughout Western Ontario. He is a good farmer, has a pleasing manner, is easy of speech, and makes a good impression on his audience. While Mr. Annis is not announced for many regular meetings, we are glad to have him on our reserve for most of the season.

SUBJECTS: "Production of Milk," "Pure and Impure Seeds of Weak Vitality," "Cultivation of the Soil, and the Eradication of Weeds," "Corn for the Silo," "Field Roots," "Growing Red Clover for Seed." Evening: "The Farmers' Honorable Calling," "Our Country."

BARBOUR, GAVIN, Crosshill.—Mr. Barbour has now had two years' experience as an Institute worker, and his services should prove of great benefit to the districts in which the production of beef and the cultivation of the soil are of importance. Mr. Barbour is a representative of a large number of farmers who have succeeded, by hard labor and a thorough knowledge of the lines of farming followed, in increasing the productivity of the farm and making many improvements, while at the same time paying off obligations. The young farmers should specially benefit from Mr. Barbour's addresses.

SUBJECTS: "Selection, Breeding and Feeding of Beef Cattle," "Cultivation of the Soil," "Care of Manure." Evening: "Farmers' Sons."

BECKETT, H. L., Hamilton.—Mr. Beckett is the son of a prosperous farmer in the vicinity of Hamilton. He spent his early years on the farm, and subsequently took a full course at the Ontario Agricultural College, graduating in 1893. Mr. Beckett has successfully managed the homestead, devoting a good deal of attention to the dairy industry. He had charge of one of the travelling dairies which toured the Province some years ago, and gave general satisfaction in conducting this educational campaign. He has already had extended experience in Institute work, and is quite at home in it. Mr. Beckett will be available for occasional meetings this winter.

SUBJECTS: "Farmyard Manure: its Management and Application," "Improving our Dairy Herds," "Feeding for Milk." Evening: "Farming as an Occupation."

BUCHANAN, J., B.S.A., Lecturer in Field Husbandry, Agricultural College, Guelph.—Mr. Buchanan is the son of a farmer and after spending his early years on the farm, took a course at the Agricultural College where he graduated some years ago. Since then most of his time has been spent in office and practical work in the experimental department with which he is now connected. Mr. Buchanan has had full charge of the Experimental Department and the lectures in Field Husbandry, in the absence of Prof. C. A. Zavitz during the past year. Mr. Buchanan is a recognized authority on the improvement of crops and the growing of grasses and alfalfa, and is a very pleasing and convincing speaker.

SUBJECTS: Afternoon: "The Improvement of Grain Crops," "The Work of the Ontario Experimental Union," "Pasture Land and Grasses," "Alfalfa." Evening: "The Secret of Nature Study." "Some Interesting Things about Farm Plants," "Student Life at the Ontario Agricultural College."

CAMPBELL, JNO., Woodville.—It is not necessary to more than mention that the John Campbell referred to is the well known sheep breeder who has been so successful, not only at Exhibitions in Canada, but also at the leading shows on the other side of the line. Mr. Campbell's specialty is sheep raising, and we also consider him one of the best authorities on general farming, and the production of beef.

Subjects: "Growing Lambs for Profit," "The Butcher's Bullock, from Breeding to Block," "The Bacon Hog," "How to Double the Production and Income of the Average Farm," "Tile Draining." Evening: "Ontario, the Banner Province of the Dominion," "Farming as a Business."

Carlaw, George, Warkworth.—Mr. Carlaw is a good, practical farmer in Northumberland County. He attended the Ontario Agricultural College in his earlier years, and since then has been putting into practice on his farm the knowledge acquired in that institution. He is a practical dairyman, having served his time both in the home dairy and in the factory. Mr. Carlaw is also familiar with the practical work of the Farmers' Institute, having been secretary of his own for many years.

Subjects: "Eradication of Weeds," "Dairying for Profit," "Corn for the Silo," "Cultivation of the Soil." Evening: "Education of the Farmer," "Butter making on the Farm."

Caston, G. C., Craighurst.—Mr. Caston is past president of the Ontario Fruit Growers' Association and has charge of the Fruit Experiment station in Simcoe County. He is one of the oldest Institute workers, and is well and favorably known in this capacity throughout the Province. In addition to the subjects bearing directly on fruit, Mr. Caston is prepared to discuss cold storage, transportation, and marketing of products. He has probably done as much as any other man to introduce hardy fruits suitable to our northern districts.

Subjects: "Succulent Foods and Fodder Crops," "Soil Problems and Nitrogen Traps," "The Export Bacon Trade," "Orchard Fruits of Ontario; their Care and Culture," "Some of our Troublesome Weeds," (illustrated). Evening: "Picking, Packing and Shipping Fruit," "The Fruit Garden," "The Land we Live in."

Clark, J. G., Ottawa.—Mr. Clark has for many years been a prominent farmer in the vicinity of Ottawa and has given special attention to the production of milk for city trade. The dairyman who can successfully produce milk for this trade is in a position to give sound and valuable advice to patrons of the cheese factory and creamery as to methods of care and handling. Mr. Clark is also a recognized authority on heavy horses, and has been engaged during the past fall by the Provincial Department in taking a census of the horse industry of the province.

Subjects: "The Breeding and Management of Heavy Horses," "The Judging of Dairy Cattle." "Grading up the Dairy Herd," "The Production and Handling of Milk," "The Cultivation of Roots and Ensilage," "Country versus City Life."

Clark, J. W., Cainsville.—Mr. Clark is one of the largest breeders and feeders of poultry in the Province. He is a strong advocate of utility breeds for the farmer and approves of fattening chickens in crates. That he knows how to select the proper type for the best results is shown by the large number of prizes he has won on dressed poultry at the Winter Fair, Guelph. These prizes include the sweepstakes for the best pair in show. Mr. Clark is also a breeder of pure-bred hogs of the bacon type, has had several years experience in growing alfalfa, and has also a large apiary. Mr. Clark has given considerable attention to the production of good seed and methods of identification and eradication of weeds.

Subjects: "The Importance of Seed Selection," "Noxious Weeds and Best Methods of Eradication," "Growing Alfalfa," "Feeding Hogs, Bacon Type vs. Short Fat," "Manure; its Care and Application," "Improvement of our Public Roads." Evening: "Poultry; Selecting, Breeding, Hatching, Rearing, Fattening," "Farmers' Poultry Houses and Fixtures," "The Incubator; Eggs in Winter," "Care of the Honey Bee."

Drummond, D, Ottawa, 59 Waverley St.—Mr. Drummond is a noted breeder of Ayrshire cattle, is a successful dairyman and a good farmer. He has, therefore, the requisites of a good speaker. He also speaks French fluently, and so has been successful in sections of the Province where inhabitants do not speak English well. He uses charts as well as the stereopticon to illustrate his talks on the dairy cow. Mr. Drummond's services have been in demand in other Provinces, and he has spoken at Institute meetings and judged cattle at fall fairs from the Atlantic to the Pacific. Mr. Drummond is available for only occasional meetings this season.

Subjects: "Selection, Breeding and Feeding of Dairy Stock," "Soil Moisture and Cultivation," "Care and Application of Manure," "The Importance of Selected Seed to the Farmer."

Drury, E. C., Crown Hill.—Mr. Drury is an honor graduate of the O.A.C. and works successfully 150 acres, the farm upon which his father and grandfather lived. He is a fluent, forcible and convincing speaker and is well prepared to discuss the subjects for which he is announced. Mr. Drury is a good judge of live stock and a recognized authority on soil cultivation.

Subjects: "Rotation of Crops, including Cultivation," "Weeds and how to Combat Them," "Soil Moisture and its Control," "The Farmers' Flock of Sheep," "The Breeding and Feeding of Beef Animals." Evening: "The Social Side of Farming."

EAGER, WM., Morrisburg.—Mr. Eager has large interests in dairying in the eastern part of the Province and his long practical experience places him in a position to give reliable information and sound advice to dairymen.

SUBJECTS: "The Duties of the Patron, Proprietor and Maker," "The Care of Milk on the Farm and in the Factory," "The Management and Care of Dairy Cattle." Evening: "The Advantages and Pleasures of Farm Life."

ECHLIN, J. H., Balderson.—Mr. Echlin has had extended experience in dairying so far as the making side of the problem is concerned. He has been one of the regular dairy syndicate instructors during the summer season for several years, and has also been one of the Dairy School Instructors at Kingston. When the Department was looking for a man to act as Dairy Sanitary Inspector last winter, they chose Mr. Echlin. He has spent the past summer in inspecting factories throughout Eastern Ontario with a view to inducing the proprietors and makers to keep their premises in a proper sanitary condition. From his wide experience in inspecting these factories as well as the farms of the patrons, Mr. Echlin's services should prove most valuable in the Dairy sections which he may visit.

SUBJECTS: "Sanitary Requirements of Cheese Factories," "Care of Milk for Cheese Factories." "Some of the Chief Requirements to Perfect the Cheese Products." "Duties of Patrons, Proprietors and Manufacturers."

ELLIOTT, ANDREW, Galt.—Mr. Elliott was born near Galt and has been a most successful breeder of dairy cattle and bacon hogs, for many years. He has retired from the management of his farm, his son William succeeding him in this. Mr. Elliott has been sought after by several States of the Union for Institute work, with the result that he has devoted very little time to the Ontario Institutes for several seasons. Mr. Elliott is one of our oldest Institute workers, and is enthusiastic, persevering, and extremely anxious for the success of every meeting he attends. His long experience as a successful farmer, and his ability to tell in an instructive and forcible manner just what he has accomplished, as well as the conclusions of othersas to the most approved methods, renders him a valuable worker.

SUBJECTS: "Moisture and Fertility of the Soil," "The Benefits of Clover," "Clover Hay," "Roots Necessary to the Successful Handling of Live Stock," "Corn and Silage." "The Profits of Sheep," "The Modern Hog," "Breeding, Feeding and Caring for the Dairy Cow," "Principles of Stock Breeding," "Pure Seeds," "Concrete." Evening: "Our Duty."

ELLIOTT, WM., Galt.—MR. Wm. Elliott is the son of Andrew Elliott. He attended the O. A. C., Guelph, and since graduation has been putting into practice the knowledge there gained. He has followed in his father's steps as a breeder of dairy cattle and bacon hogs, and has been a conspicuous prize winner at our large fairs. He is thoroughly practical and up-to-date in his methods of farming.

SUBJECTS: "The Cultivation of our Farms," "The Care and Breeding of Dairy Cows," "The Bacon Hog, Breeding and Feeding." Evening: "Things we ought to think about."

FOSTER, J. G., Myrtle Station.—Mr. Foster is managing the farm owned by Mr. F. W. Hodson, former Superintendent of Farmers' Institutes, and makes a speciality of dairying. Mr. Foster was secretary of N. Hastings for several years. His success in this office renders his services of special benefit to Institute officers in their local constituencies.

SUBJECTS: "Crop Rotation," "The Bacon Hog," "The Dairy Cow," "Our Fodder Crops." Evening: "The Land we Live in."

FRASER, W. S., Bradford.—Mr. Fraser is one of the pioneer Institute workers of Ontario. In the early days when Institute work was in its infancy he attended the meetings as the "practical" man, on deputations composed largely of college professors. He is a thoroughly practical farmer. He is well acquainted with most of the farm problems, and, having been over the entire Province of Ontario as well as in most of the other Provinces on Institute work, has become a valuable worker.

SUBJECTS: "Noxious Weeds and How to Deal with Them," "Seed Selection," "Clover and its Uses," "Sheep Management," "Bacon Hog." "Soil Cultivation; Underdraining," "Feeds and Feeding." Evening: "Home Life on the Farm," "Something Needful for Farmers," "A Trip in Eastern Canada."

GARDHOUSE JOHN, Highfield.—Mr. Gardhouse is a well-known breeder of shorthorn cattle and long wool sheep. All of the prize lists of our large fairs testify to his ability to raise high-class stock. He raises most of the food for his pure-bred stock, and is prepared to tell how he cultivates his land, plants his crops and mixes his foods so as to secure the best results from his live stock. Mr. Gardhouse will be found of special value to those Institutes where the officers wish to have practical work on heavy horses, beef cattle, or sheep.

Subjects: "Horse Breeding for Profit," "Care and Management of Horses," "How to Select and Feed Beef Cattle," "Care and Management of Sheep," "Raising Feed for Live Stock." Evening: "How to Improve Present Farm Conditions," "How to Interest the Young People in the Farm."

Glendinning, Henry, Manilla.—Mr. Glendinning, besides breeding and feeding dairy cattle, has made a reputation as a producer of field seeds. For years he has studied the weed question, and by practically eradicating the weed seeds from his fields has been able to produce a quantity of seed almost free from impurities. With his seed charts and talks on cultivation of the soil and rotation of crops, he has helped many farmers in Ontario to improve their methods of farming and to increase their profits. Mr. Glendinning is a most successful dairy farmer and a director of the Eastern Dairymen's Association.

Subjects: "Feeds and Feeding," "Growing Clover and How to Save It," "Growing Red and Alsike Clover for Seed," "The Dairy Cow," "The Farm Water Supply." Evening: "Beautifying the Farm Home," "Farm Conveniences."

Groh, Anson, Preston.—Mr. Groh has demonstrated how a very ordinary farm can be made a money-maker to its owner at the same time that the fertility is being increased and improvements paid for. Mr. Groh has given close attention to farm forestry, a subject of importance to Ontario farmers.

Subjects: "The Farmers' Wood Lot," "Breeding, Feeding and Management of a Dairy Herd," "A Dairy Farm and a Farm Dairy," "Bacon Hogs," "Systematic Rotation of Crops," "Soil Moisture; Its Importance and Conservation," "Doubling the Revenue of the Farm in Five Years," "Clover and Lucerne." Evening: "The Stairway to Success," "The Farmer and the Sun," "Farming."

Grose, Henry, Lefroy.—Mr. Grose is the owner of a first-class farm in Simcoe County, and has been eminently successful in general farming. He has the happy faculty of presenting hard facts in a pleasing manner, and his address to boys on the farm is very instructive and uplifting. Mr. Grose has attended Institute meetings for two seasons with acceptance, and his services should be of special value in those sections where mixed farming is followed.

Subjects: "How to Increase and Maintain the Fertility of the Soil," "Selection of Seed," "Home Dairy Work," "The Growing of Clover." Evening: "Making Farm Life Attractive for the Boy."

Hallman, A. C., Breslau.—Mr. Hallman is of German extraction and is located in a German settlement in the County of Waterloo. He is a well known breeder and feeder of dairy cattle, and for years has been a prize winner for hogs at the Toronto Industrial Fair. He has also judged at many of our fairs, including Toronto Industrial, hence his talk on the improvement of live stock has been well received by many farmers.

Subjects: "How to Improve our Live Stock; their Care and Feeding." "The Bacon Hog and Export Trade," "Cultivation of Corn and the Silo," "Growing Sugar Beets for the Factory," "Home Dairying," "Noxious Weeds." Evening: "The Farmers' Fruit Garden," "Poultry on the Farm."

Holterman, R. F., Bradford.—Mr. Holterman has followed bee-keeping for a number of years and has been identified with the provincial organization as one of its officers from time to time. Mr. Holterman also gave instruction on this subject to the regular students at the Agricultural College for several years.

Subjects: "Bee-keeping for the average Farmer," "The Life of the Honey Bee," "The Care of Bees.

Hilborn, J. L., Leamington.—For a long time the name of Mr. Hilborn has been familiar as one of the leading fruit growers in Lambton County. He owns a splendid fruit farm on the north shore of Lake Erie, which bears every evidence of thrift and prosperity. His buildings are neatly painted, and no weeds are allowed to grow to the detriment of the crops. A 6,000 gallon tank holds water which is used for irrigation.

Subjects: "Growing Early Vegetables for Commercial Purposes," "Care and Cultivation of a Peach Orchard," "Cement for Building Purposes," "The Farmer's Fruit and Vegetable Garden."

Hume, Alex., Menie.—Mr. Hume is a noted Ayrshire breeder in the County of Northumberland. He is also a noted prize winner at our fall fairs, and as he is well prepared to discuss the dairy herd from all standpoints, his services will be appreciated.

Subjects: "Selection and Care of the Dairy Herd," "Rotation of Crops and Application of Manure," "The Bacon Hog." Evening: "Advantages of Farm Life."

James, D., Langstaff.—Mr. James took possession of the farm on which he now resides some 34 years ago, and has succeeded in converting it from a bed of weeds and rubbish into a clean, systematic and well equipped farm. He is a believer in general farming, as will be seen from his list of subjects. Some 30 years ago Mr. James and his neighbors formed an association and held weekly meetings throughout the winter. At that time he began the collection of a library, and to-day has one of the best equipped agricultural libraries to be found among practical farmers.

Subjects: "Destruction of Weeds," "Home Dairying," "Growing and Curing Alfalfa," "Corn for Ensilage," "The Farmers' Wood Lot." Evening: "Some Mistakes made by Farmers," "Hits and Misses."

Jones, Harold, Maitland:—For a long time it was thought that the St. Lawrence Valley would never become a fruit-growing district. Mr. Jones, however, has demonstrated to the contrary. He is one of the men who has made the apple, known as the "McIntosh Red," famous throughout the world. On his farm is located one of the Provincial Fruit Experiment Stations, and through this Mr. Jones has for years demonstrated to the farmers throughout the Valley the benefits to be derived from clean cultivation, proper fertilizing and persistent spraying. As the result of careful spraying Mr. Jones has raised large crops of fine potatoes, while those of his neighbors were ruined by rot.

Subjects: "How to Manage our Fruit Orchards; Planting, Cultivating, Fertilizing, Harvesting, Packing, etc.," "Life History of some of our Troublesome Insects," "Spraying, and why we do it," "Potato Culture and Treatment for Blight and Rot." Evening: "The Balance of Nature, Bird Life and Insect World."

Johnson, D., Forest.—Mr. Johnson is a successful grower and shipper of apples and other large fruits and has a good practical knowledge of all lines of farming. He is specially interested in the co-operative production and marketing of fruit which has been carried on so successfully at Forest. This success has been due largely to Mr. Johnson's efforts.

Subjects: Care and Cultivation of Fruit," "Insects and Fungi affecting Fruit and Trees," "The Spraying of Fruit," "Marketing and Shipping of Fruit," "Co-operation," "Fodder for Export Cattle."

Kerr, W. J., City View.—Mr. Kerr has been an extensive grower of small fruits and vegetables for the past fifteen years, and has been able to keep in touch with the work along these lines at the Central Experimental Farm. Mr. Kerr has attended special series of orchard meetings, and his addresses to farmers in Eastern Ontario as to the possibilities of fruit growing should prove an incentive to them to go more largely into this profitable branch.

Subjects: "Fruit and Vegetable Growing," "Decorating the Home Grounds," "Marketing of Fruits and Vegetables."

Klinck, L. S., Ste. Anne de Bellevue.—Mr. Klink is a graduate of the Ontario Agricultural College and had had extensive experience in College work across the line. He is now one of the members of the regular staff of the Agricultural College at Ste. Anne de Bellevue. Mr. Klinck has given special study to the improvement of farm crops, and his instructions as to the improvement and production of corn should be of value in the sections which he may visit.

Subjects: Cultivating, Harvesting and Storing of Seed Corn," "Selecting, Grading and Testing Seed Corn," "Methods of Breeding Seed Corn for the Canadian Trade," "The Improvement of our Cereal Crops by Seed Selection," "The Seed Control Act," "Weeds and their Eradication."

Kydd, W. F., Simcoe.—Mr. Kydd talks on horses, dairy cattle and small fruits. He has had a large practical experience in all these departments, and being an aggressive, forceful speaker, his words carry weight. He has also had a wide experience in fair matters, having been superintendent of the horse department of probably the largest purely agricultural show in the Province. He is also a judge of both light and heavy horses, and, as such, has been invited to place awards in many parts of Ontario. He is one of our most acceptable Institute workers.

Subjects: "Am I Raising the most Profitable Horse?" "The Dairy Cow; Her Summer Feed and Winter Care," "Small Fruits and Care of Grape Vines, Peach and Plum Trees," "Potato Spraying." Evening: "Dropped Stitches."

Lavery, J. F., V. S., Sunderland.—Dr. Lavery is a Veterinary Surgeon of extended experience in the locality in which he lives. This practical experience, together with the fact that he has carried on farm operations during a good deal of the time that he was practicing, places him in a position to be of special value as an Institute worker. His addresses on live stock problems are very instructive and the boys and young men should not fail to hear them.

Subjects: "The Comparative Anatomy of the Digestive Organs of Horses and Cattle, and Foods Suited to Each." "The Diseases of Brood Sows, and Simple Remedies." "Diseases

affecting the Young Colt, and Remedies." "Care of the Mare and Colt." Evening: "Examination of a Horse for Soundness," "The Jurisprudence of the Sale or Exchange of Horses."

Lee, Erland, Stoney Creek.—Mr. Lee has made his reputation as a practical dairy farmer. He is familiar with all kinds of farm work, as well as the manufacture of milk into butter. He practices soiling to a large extent with his cows. Having been secretary of South Wentworth Farmers' Institute for many years, he is in a position to give assistance and advice of value to officers.

Subjects: "The Codling Moth and Apple Scab," "Conservation of Soil Moisture," "Breeding and Feeding of the Dairy Herd," "Care of Milk for the Factory and Creamery," "Home Dairying," "Treatment of Milk Fever," "The Silo," Evening: "Improvement by Selection."

Lennox, W. J., B. S. A., Newton Robinson.—Mr. Lennox is the son of a successful farmer in the county of Simcoe, and has always taken an active interest in the work as conducted on his father's farm. He has taken special pride in the production of different kinds of fowl since he was a mere lad and has won many prizes at local exhibitions. Mr. Lennox lives in the midst of a section noted for the production of alsike and red clover, and has been successful along these lines for a number of years. The young men and women of the farm should be much benefited by what Mr. Lennox has to say, for although he is a comparatively young man, he has already shown what can be done by systematic study and close application.

Subjects: "Sheep; Breeds and Management," "Poultry for the Farmer," "Growing and Harvesting of Alsike and Red Clover," "Rotation of Crops." Evening: "The Farmer's Garden," "Training of Young Horses."

Lick, Elmer, Oshawa.—Mr. Lick makes a specialty of fruit culture. He has had charge of a large orchard for a number of years, and when the Fruit Marks Act was passed by the Dominion Government he was one of the first inspectors to be appointed by the Dominion Department of Agriculture. In this capacity he has had opportunity of looking into all matters connected with the fruit industry, from the cultivation of the soil to the disposing of the products. He, therefore, speaks with authority, and can view the question both from the producers and commercial standpoint.

Subjects: "The Production of Apples," "Marketing Apples," "The Uses of Cement about the Farm," Growing Corn," "The Farmer's Garden."

McCallum, J. M., Shakespeare.—Mr. McCallum is a graduate of the Ontario Agricultural College and has, since his graduation, been putting into practice with good effect the lessons learned in his course. Mr. McCallum has been a most acceptable judge at the fall fairs, and has done some local institute work. He is a forcible and convincing speaker.

Subjects: "The Importance of Selecting good Seed Grain," "The Spring Treatment of Seed Grain for Prevention of Smut." "The Corn Crop,—Growing, Cultivating, Saving, etc.," "Clovers,—Their Place in Rotation, Cultivation, Saving, etc.," "The Draught Horse on the Farm." Evening: "The Problem of Keeping Ontario Boys and Girls on the Farm."

McCrea, Lieut. Col. D., Guelph.—It is not necessary to more than mention the name of Lieut. Col. McCrea, as he is well known to the great majority of farmers of the Province as a breeder of Galloway cattle. He is known in the vicinity of Guelph as an up-to-date and successful farmer. His addresses on stock and general farm practices should prove of value to the districts which he may visit.

Subjects: "Beef," "Heavy Horses," "Sheep Raising," "General Cultivation," "Rotation of Crops," "Corn and the Silo," "Field Roots," "Forage Plants; with special reference to grasses and clovers."

McMillan, Thos., Seaforth.—For many years Mr. McMillan has taken a deep interest in Institute work, being president of his local Institute at the present time. He is a practical farmer and makes a specialty of beef cattle and heavy horses. His advice on general farm practices is based upon years of successful experience and observation. His talk to young people is most inspiring and the young men especially cannot well afford to miss the opportunity of hearing him.

Subjects: "The Heavy Horse; How to Breed and Feed," "Breeding and Marketing of Beef Animals," "Soil Cultivation and Crop Rotation." Evening: "The Demands of Canadian Agriculture," "A Talk to our Young People."

McRae, A. D., Maxville.—Mr. McRae is a practical farmer who has been closely identified with the dairy business for about thirty years. He has always kept a good working herd and has had the additional advantage of living near men who have been prominent in the produc-

tion of pure bred animals. The practical dairyman will find much of interest to discuss with Mr. McRae at Institute meetings.

SUBJECTS: "The Care of Milk, from the Cow to the Factory," "The Improvement of the Dairy Herd," "The Best Crops for the Dairy Farm."

MASON, T. H., Straffordville.—When the Ontario Agricultural College at Guelph first opened its doors to farmers' sons, Mr. Mason was one of the first to enroll. He spent two years at the institution at that time, and has been able, as a result of his college work, to put into practice on his own farm so many modern ideas and methods, that his neighbors have found his farm and farm work a constant inspiration to them. Mr. Mason makes a specialty of dairying, hog raising, and production of corn. He has kept in close touch with the work of the College through all the years and can give much of value regarding the work of that institution, as well as of the Experimental Union.

SUBJECTS: "Care and Food of Dairy Cattle," "Hog Raising," "Sheep Raising," "Corn for Silage," "Maintenance of Soil Fertility." Evening: "A Trip to the Maritime Provinces." "Changing Conditions of Ontario Agriculture."

MITCHELL, J. W., Superintendent Eastern Dairy School, Kingston.—Mr. Mitchell has been closely identified with the dairy interests of Ontario for some years. He acts as Superintendent of the Dairy School in the winter months, and in the summer instructs the creamery men throughout the eastern portion of the Province. Mr. Mitchell is well qualified to advise the farmers, proprietors and manufacturers with reference to the production and handling of milk, and the manufacture of the same. He is a clear and forcible speaker.

SUBJECTS: "The Cream Gathering Creamery," "Care of Milk for Cheese Factories and Creameries," "The Present Requirements of the Dairy Industry."

NASH, C. W., 94 Lee Ave., Toronto.—Mr. Nash has an international reputation on the subjects that embrace natural history. He has long been an authority on birds, and has written bulletins both for the Department of Agriculture and for the Department of Education on this important subject. His talks also deal with plant and insect life, as well as the rearing and breeding of domestic animals. Probably there is no one on the staff who can better interest young people at Institute meetings than Mr. C. W. Nash.

SUBJECTS: "How Plants Grow," "Breeding of Domestic Animals," "The Value of our Birds," "Our Insect Pests," "Nature about the Farm," "Farm Forestry."

ORR, J. E., Fruitland.—Mr. Orr lives on a 125-acre fruit farm, nearly every foot of which is devoted to fruit growing. Living, as he does, in one of the best sections of the Niagara District, and specializing as he does in the production of fruit, Mr. Orr has a technical knowledge, of this subject possessed by few men of his age. From the cultivation of the soil to the marketing of the fruit, he is familiar with every detail.

SUBJECTS: "Some Insect Enemies of the Orchardist," "Mistakes made in Spraying,' "Notes on Plums," "Controlling the Codling Moth," "The Black Knot, and how we Exterminated it in our Township," "The Culture and Care of Fruit Trees," "Can we Overcome Off Years' in our Orchards?" "How and When to Prune."

PAGET, J. N., Canboro.—Mr. Paget is well known in dairy circles through his connection with the Western Dairymen's Association. He has been either director or President for a number of years, and is now a member of the Directorate. Mr. Paget is particularly well known in his own district for the aggressive and up-to-date methods he has adopted in conducting his dairy business. He is not only a thoroughly practical man, but is capable of presenting the results of his experience in a clear and forceful manner.

SUBJECTS: "Care and Production of Milk," "Profit and Loss in Dairying," "Handling the Finished Product until it Reaches the Consumer." Evening: "The Relation which should exist between Producer, Proprietor and Maker."

PEARCE, JOHN S., London.—The name of John S. Pearce is well known throughout Ontario, particularly in the West, as the head of a most reliable seed firm for many years. Some four or five years since Mr. Pearce gave up business to take charge of the parks and gardens and general horticultural work in London. He has had extended experience in Institute work, and his addresses on the selection of seed, planting of trees, etc., will be found very instructive.

SUBJECTS: "Selection, Care and Cultivation of Seeds," "School Houses and their Surroundings," "Planting of Trees for Ornament and Timber," "What, When and How to Plant," "The Farmer's Lawn and Flower Garden."

PEER, W. E. A., Burlington.—Mr. Peer is one of the best informed young fruit men in the southern part of the Province. He has had considerable experience in inspecting orchards, conducting spraying demonstrations, and superintending the fumigation of nursery stock. Mr. Peer has also lectured at Institute meetings with acceptance.

SUBJECTS: "Strawberry Culture," "Tomato Growing," "Plum Culture," "The Cherry," "A Young Man's Duty to Agriculture," "Ways and Means of Controlling Insect Life."

Publow, G. G., Chief Dairy Instructor for Eastern Ontario, Kingston.—Mr. Publow is well known in the Province as the man who has done so much to improve the quality of cheese in the eastern sections of Ontario. He has been Chief Instructor since the syndicate system was inaugurated, and knows better than any other man the requirements of the different sections. His addresses upon the "Sanitary Requirements of Cheese Factories," and "The Production and Care of Milk upon the Farm" are presented in a forcible and convincing manner.

Subjects: "The Production and Care of Milk in Cheese Factories," "The Importance of Properly Built, Well Equipped and Sanitary Factories," "Skill and Forethought Essential in the Manufacture of Cheese," "The Cheese Industries of the Dominion."

Raynor, T. G., B.S.A., Ottawa.—There will be few, indeed, of our readers who do not know Mr. Raynor. He has been in nearly every Institute district in Ontario, as well as in some of the States of the Union. He is a good speaker and is thoroughly familiar with his subjects. He is a graduate of the O.A.C., has been president of the Old Central Farmers' Institute, and has been identified with nearly every progressive agricultural movement in Ontario during the past twenty years. Mr. Raynor now has charge of the Ontario work under the direction of the Seed Division of the Dominion Department of Agriculture.

Subjects: "Feeds and Feeding," (Illustrated) "Forestry," "Grading up a Herd or Flock," "Corn and Clover," "Soil Cultivation," "The Production of Pork," "Noxious Weeds and Methods of Destroying Them," "A Forward Movement in Field Agriculture," "How to Increase our Dairy Profits," "The Farmer and the New Seed Control Act." Evening: "Agricultural Development," "Mistakes in Farming."

Reed, Dr. Henry G., Georgetown.—Having had a good practical farm training, and a thorough course in veterinary science, Dr. Reed is able to deal not only with the problem of breeding and feeding live stock, but can also discuss the question of "Domestic Animals in Health and Disease." Dr. Reed has been much in demand to judge live stock at fall fairs, and his Institute work has been entirely satisfactory and much appreciated.

Subjects: Principles and Practice of Stock Breeding," "Horse Breeding for Profit," "Horse Breeding and Care in Relation to Diseases," "Diseases of Digestive System of Cattle," "Brood Mare and Foal."

Rennie, Simpson, 454½ Ontario Street, Toronto.—The name of Rennie needs no introduction to the farmers of Ontario. Mr. Simpson Rennie was connected with the agricultural club formed in Scarboro Township, 35 years ago, and attributes much of his success to the knowledge gained from the papers and discussions given at the club long before the establishment of Farmers' Institutes. Mr. Rennie is one of the best authorities we have on all lines of general farming. His farm won the gold medal in the "Good Farms Competition" in Ontario in 1883.

Subjects: "Is the Sugar Beet a Profitable Crop for the Farmer to Grow?" "Root Culture and Rotation," "Destruction of Weeds," "Selecting Cattle for Beef Production."

Reynolds, A. J., Scarboro Junction.—Mr. Reynolds is secretary of East York Institute. Besides the regular Institute meetings he and his fellow workers have held a series of special meetings conducted entirely by local talent, and without any assistance from the Department. The Annual Seed Fair of East York of which Mr. Reynolds is also secretary, has proved a very instructive line of work for the Institute members. Unfortunately Mr. Reynolds cannot conveniently leave home for a long trip, but we are glad to place his name on our reserve list.

Subjects: "The Dairy Cow; her Care and Feed," "Corn and the Silo," "Clover Growing," "Objects and Methods of Cultivation." "Seed Fairs," "Sugar Beets."

Shaw, John C., Norwich.—Mr. Shaw is a successful farmer in the county of Oxford, having removed from the county of Wentworth some few years ago. Since coming to South Oxford he has demonstrated that money can be made from a run-down dirty farm at the same time that it is being put in first-class condition. Mr. Shaw's advice on this line of work, as well as upon general farm topics, should prove of interest and benefit to the districts which he may visit.

Subjects: "How to Increase the Production of the Average Farm," "The Buying and Building up of Run-down Farms as an Investment," "Rotation and Cultivation," "Social Conditions upon the Farm."

Shearer, W. C., Bright.—Dairying is the particular department of farming in which Mr. Shearer has been eminently successful. He is thoroughly practical, a good speaker, an Institute man of experience for some years past, and is a most acceptable delegate. As will be seen from his subjects, Mr. Shearer is also prepared to discuss the bacon, seed and corn questions.

Subjects: "Rotation of Crops and Selection of Seed Grain," "A Good Bacon Hog and its Feeding," "Selecting and Testing a Dairy Herd," "Production of Milk and its Care for the Factory," "Success in Growing Corn." Evening: "Profitable Farming," "Poultry Raising for the Boys," "Butter Making on the Farm."

Sheppard, Fred. A., Queenston.—Mr. Sheppard is a successful fruit farmer in the celebrated Queenston district. He has made a specialty of packing fruit in fancy boxes for the best trade. He has also been particularly successful in grafting and budding, and gives illustrations of both these methods of propagation at the meetings. He is also a producer of tomatoes, and talks tomato culture from the cold frame to the market.

Subjects: "Propagation of Fruit Trees, Vines, Care of Orchards and Vineyards," "Clover, Corn and Roots." "The Importance of Soil Moisture and How to Conserve It," "Small Fruit for the Home Market," "Insects and Fungi Injurious to our Fruit Crop," "Weeds, and how to Destroy Them," "Some Advantages of Living on a Farm."

Sheppard, Major James, Queenston.—As the title would imply Major Sheppard has had a military record. As a defender of the country in 1866, he has a fund of historical knowledge that different Institutes have found useful for their evening meetings. His talk on "Three Historical Days on the Niagara River" has been as favorably commented on as any that have been delivered. His practical subjects deal with orchard management and good roads. With the latter movement he has been identified for many years. In 1902 he had charge of the Good Roads Movement in Eastern Ontario, and built roads in several townships as a guide to the municipal council for future work in road making

Subjects: "Planting and Care of Fruit Trees," "Propagating Fruit, Grafting, Budding, etc.," "The Spray Pump, when and how to use it," "Macadam Roads, Cost of Construction," "The Improvement of Country Roads," "Soil Tillage for Fertility and Moisture." Evening: "Opportunities on Canadian Farms," "Three Historic Days on the Niagara River."

Sherrington, A. E., Walkerton.—Mr. Sherrington has charge of the Provincial Fruit Experiment Station for that district. He is well up in matters pertaining to fruit culture, and is known in the Lake Huron district as a "co-operative farmer," for he believes that "in union is strength." He is the manager of his local co-operative society, and handles most of the fruit shipped out of the town of Walkerton.

Subjects: "Orchard Management," "Planting, Pruning and Grafting," "Spraying as a Preventive of Insects and Fungous Diseases," "Co-operative Marketing of Farm Products," "Conservation of Soil Moisture," "Selection of Seed Grain and the Eradication of Weeds," "The Importance of Uniformity, Quantity and Quality in Farm Products," (afternoon or evening). Evening: "The Farmer's Fruit Garden," "Breeding, Feeding and Marketing of Poultry." "Beautifying a Farm Home."

Standish, Dr. J., Walkerton.—After a thorough training in practical work upon his father's farm in the County of Wellington, Dr. Standish took a course in veterinary science and followed that profession for some 25 years. He has done considerable Institute work in Ontario and the other Provinces of the Dominion during the past three or four years. He has been a prominent judge of live stock at fall fairs for the past 30 years. Dr. Standish is an authority on the subject of Horses, Beef Cattle, and Bacon Hogs, and is also prepared to discuss general farm management.

Subjects: "Breeding of Horses," "Selection and Feeding of Beef Cattle," "Requirements of the Bacon Hog Industry," "Diseases of the Digestive System of Cattle," "Unsoundness in Horses and the Best Means of Detecting the Same." Evening: "Training of the Young Horse."

W. F. Stephen, Huntingdon, Que.—Mr. Stephen is widely known as a successful breeder of Ayrshire cattle, and has been sought after through the whole Dominion as a judge of dairy cattle. Mr. Stephen is the owner of a good working herd of pure breeds, and his address upon "The growing of crops suited to dairy cattle" and "The dairy cow" should prove of special interest in dairy sections.

Subjects: "Soil and Tillage," "Corn and the Silo," "The Dairy Cow: How to Rear and Feed Her," "Good Roads and How to Make Them," "Keeping Farm Accounts and Records," "Stable Manure and Fertilizers." Evening: "How to interest the Boys and Girls in Farming," "Making the Most of Farm Life."

Stevenson, R. S., Ancaster, is one of the oldest Institute workers in Ontario. Being a practical dairyman and breeder of dairy cattle, he has been identified with advanced dairy work in Ontario for a long time. During the past few years he has acted as judge of live stock at many fall fairs, and has given excellent satisfaction. No matter where he goes Mr. Stevenson is always welcome, and is recognized as a man who thoroughly understands the work he undertakes to discuss.

Subjects: "A Practical Talk on Dairy Cows, Breeding, Feeding, Selecting, etc." "Growing the Corn Crop and Handling it to the Best Advantage," "The Growing of Root Crops," "The Cream Separator on the Farm," "The Farm Water Supply."

Thompson, Robert, St. Catharines.—Mr. Thompson is a practical fruit grower, and has also had a wide experience in handling and shipping of fruit. He is also interested in the subject of cold storage, and has practically demonstrated the need for such an institution in a large fruit business. Mr. Thompson is also a practical farmer, and, in addition to his orchard work, raises large quantities of of poultry and hogs.

Subjects: "Poultry Raising," "Incubators and Poultry Houses," "Swine Breeding and Feeding," "Corn Growing," Small Fruit and Fruit Trees," "Gathering and Marketing of Fruit," "Cold Storage," "Under-draining," "Cultivation of the Soil," "Good Seed, and Some of our Common Weeds, and How to Destroy Them." Evening: "The Farmer of the Future and his Prospects," "Poultry Raising for Boys and Girls," "Hints on Canning Fruits and Vegetables."

Wagg, A. J., B.S.A., Mindemoya.—Mr. Wagg is a graduate of the O.A.C., and a specialist in dairying. After graduation he moved to New Ontario, and has been doing pioneer work in dairying for some years past. He is the owner of a large creamery in Mindemoya, on Manitoulin Island, and it was because of his success in this work that he was chosen for the larger field of Institute work.

Subjects: "Selection and Management of Dairy, Cattle, Calf Heifer, Cow," "Soil Fertility in Relation to Dairy Farming," "Milk; Secretion, Composition, Handling and Food Value." Evening: "Methods of Creaming Milk and Home Butter Making," "Agricultural Education," "Conditions in New Ontario for the New Settler."

Warren, J. L., Acton.—Mr. Warren has had experience as secretary of Halton Institute, and it was due largely to his aggressive work that it became the banner Institute for Ontario some years ago. He is a thorough, practical farmer, and his addresses are interesting and instructive. Institute officers will find Mr. Warren competent to give them valuable information as to conducting local Institutes.

Subjects: "Clover as a Feed and Fertilizer," "Corn and the Silo," "Breeding and Feeding of Beef Cattle," "Some Methods of Destroying Weeds." Evening: "How to Make our Institute Successful," "The Institute as an Education for Farmers' Sons and Daughters."

Wilson, D. M., Kemptville.—Mr. Wilson has been one of the regular dairy instructors for several seasons, and has given close study to the requirement of cheese factories and the care of milk upon the farm. One of the essentials in the production of high cheese or butter is that the raw material be properly looked after on the farm. Mr. Wilson will be able to give reliable advice and instruction on this point.

Subjects: "Common Taints Found in Milk, and their Action in Cheese and Butter Making", "The Patron's Relation to the Factory," "Unnecessary Loss in Chese-making." "Points to be looked for in a Dairy Cow," "Silos and Silage," "Co-operation in Dairying."

J. W. Widdifield, Uxbridge.—Mr. Widdifield is an associate of the O. A .C and has, since his graduation, managed a farm successfully in Ontario county. Mr. Widdifield is much sought after to assist in local Institute work, and his success as a practical farmer has induced the Department to send him to a few regular meetings this year. After visiting the Northwest, Mr. Widdifield returns well satisfied with the conditions in Ontario, and should be able to state to the young farmers of this Province something which will be an incentive to them to put forth greater efforts to improve and extend their agricultural operation.

Subjects: "Uses and Misuses of the Plow," "Soil Fertility, Increasing and Preserving Same," "Corn and Clover," "Destruction of Noxious Weeds."

L. A. Zufelt, Chesterville.—Mr. Zufelt has long been identified with the cheese industry in Ontario, and has been employed on the staff of Dairy Schools, and as instructor in the summer months for a number of seasons. Mr. Zufelt certainly understands thoroughly the requirements in the manufacture of cheese, and his directions to the farmers as to the proper methods for the producing and handling of milk, should prove of great value to the sections which he may visit.

Subjects: "Our Dairy Industry, Its present Conditions and Changes necessary for Its Improvement," "Sanitation of Cheese Factories and Farms," "Milk—Its Proper Treatment for Cheese Factories," "The Babcock Milk Test and its Use as a Basis of Payment for Milk."

LADY SPEAKERS.

Backus, Mrs. A.H., M.D., Aylmer.—The Women's Institutes of Ontario are to be congratulated on securing the services of Dr. Annie Backus as one of its lecturers. Having been brought up on a farm, she is familiar with rural conditions, and knows the secrets of success. She is a keen observer, and a most acceptable speaker wherever she goes. Dr. Backus has addressed Institute meetings as a Departmental delegate with great acceptance for two years. She has had much to do with the success of the Institute at Aylmer West.

Subjects: "Hygiene of the Home and Aids in Nursing," "Consumption and its Prevention," "The Importance and Meaning of Women's Work," "Training in the Home," "Education of Girls," "Poultry Raising," "The Horse: its Use and Abuse."

Mrs. Colin Campbell, Box 517, Windsor.—Mrs. Campbell has been, until recently, secretary of the West Huron Women's Institute, and under her guidance it has become one of the strongest Institutes in the Province. She has also been an acceptable speaker at Farmers' Institute meetings, and a glance at her subjects will show that she is prepared to speak on many helpful phases of women's work.

Subjects: "The Kitchen Garden—Does it Pay?" "The Housekeeper and Her Importance to the State," "Practical Housekeeping," "Food Values" (Demonstrations if desired), "Poultry Raising," "Canning Fruits and Vegetables."

Miss Susie Campbell, Brampton.—Miss Campbell first attracted the attention of the Department by the success which attended her efforts in organizing branch Institutes and enthusing those already formed in the county of Peel. Miss Campbell attended Institute meetings in several ridings last summer, and her work was much appreciated by the officers and members of the various Institutes. Her addresses on "The Ideal Home" and "The Influence of Woman" are most edifying.

Subjects: "The Ideal Home," "Grumblers and Critics," "A Young Lady's Accomplishments," "Our Fair Dominion," "The Influence of Woman." Demonstrations in Needlework.

Miss Gertrude Carter, Guelph.—Miss Carter is a graduate of the Guelph Dairy School, and since her graduation has spent several seasons in her father's creamery at Aberfoyle. She is, therefore, prepared to speak on all questions pertaining to the handling of milk and the manufacture of butter. She is also a public speaker of ability. Besides the subject of dairying, Miss Carter is prepared to discuss the art of sewing, which is one of great importance.

Subjects: "The Art of Sewing," "The Sunny Side of Dairying," "Kitchens—Past and Present." Evening: "The Modern Woman of the Farm." "Courtesy in the Home."

Miss Bertha Duncan, Emery.—Miss Duncan is a graduate of the Hamilton School of Domestic Science, and has attended a number of Women's Institute meetings. She lives on a farm, and is familiar with the conditions surrounding rural life. The practical women of country, town, and village will appreciate the services of Miss Duncan.

Subjects: "Economy in Small Things," (with demonstration), "Use of Food to the Body," "Selection and Care of Vegetables," "Salads," "Selection and Preparation of Foods," "The Relation of the Table to the Family," "Summer Desserts," (Demonstration).

Miss Gertrude Gray, 650 Bathurst St., Toronto.—Three summers ago, during the special series of Women's Institute meetings, Miss Gray took her first trip on Institute work, and was well received in the different districts visited. She took a course in domestic science in Toronto, and at her own home puts into practice the knowledge gained while taking her college course.

Subjects: "Dietetics," "Life's Talisman," "Science in the Home," "Twentieth Century Living."

Demonstrations in the following: "Meats and Fish," "Salads," "Puddings," "Eggs and Egg Dishes," "Cream Soups," "Tea Dishes."

Mrs. Andrew Kinney, Grandview.—Mrs. Kinney is one of the most successful butter makers in Brant County. For a number of years she commanded the highest price for dairy butter in the Brantford market, and it was from the reputation made in this way that she became known to the Superintendent of Farmers' Institutes, and was induced to take a position on our staff. She makes a specialty of plain sewing, and her talks on "Fabrics" will, no doubt, be helpful and interesting to many women. Mrs. Kinney carries with her samples of flour, and tells how to judge it.

Subjects: "The Fabrics we Buy, and Hints to Home Sewers" (Demonstrations in cutting), "Home-made Bread and the Flour we Use." "Home Butter Making." "Women's Institutes as Schools of Domestic Science." "Evenings at the Homestead" (evening), "The Modern Home."

Dr. Helen MacMurchy, 133 Bloor St., E., Toronto.—Dr. MacMurchy's professional duties prevent her from devoting much time to Women's Institutes. The limited time which she gives to the work is much appreciated by the districts visited, and her pointed and enthusiastic addresses on the topics mentioned are well received.

Subjects: "Twentieth Century Health Problems," "Health and the House," "The Health of Women and Girls," "Accidents and Emergencies," "Disease Germs," "Tuberculosis," "Patent Medicines," "The Day's Work."

Mrs. D. McTavish, North Bruce.—Mrs. McTavish might be called one of the pioneers of West Bruce. As soon as Women's Institutes were mentioned she was one of the first to see the possibilities of such an organization for women on the farm. Since then she has been indefatigable in her efforts on behalf of the farmers' wives and daughters of her own district. She has also found time to help in provincial work, and none of our speakers have been more acceptable to the Women's Institutes of Ontario than Mrs. McTavish.

Subjects: "Bread Making," "Home Dairying," "Kindness and Economy in the Home," "Home Economies," "The Education of our Daughters," "Care and Training of Children," "Means of Preserving Health" (evening).

Miss Blanche Maddock, Guelph.—Miss Maddock started in Farmers' Institute work before Women's Institutes were organized, so that she is thoroughly familiar with all branches of the work. Being a graduate of the Guelph Dairy School, and a student of bacteriology, she has a fund of useful information, and is always welcomed by her audiences. She has probably organized more Women's Institutes in Ontario than any other one person, and has shown herself an expert in getting into the hearts of the people, and getting them to work. Wherever Miss Maddoch has gone there have been requests that she should return to the same district.

Subjects: "Science and Butter Making," "Bread Making," "Our Women's Institutes and How to Make Them Interesting," "Bacteria; Their Relation to Health and Disease," "Different Cuts of Meat, Their Selection and Preparation," "Hygienic and Economic Values of Food," "Simple Home Remedies Without Recourse to the Patent Medicine Man or the Doctor," "A Girl's Possibilities."

Miss Bella Millar, Guelph, Ont.—Miss Millar was for two years instructor in the Home Dairy Department of the Strathroy Dairy School. There she had an opportunity of helping the farmers' daughters to become familiar with the proper care and handling of milk and its manufacture into butter. During the last four years Miss Millar has turned her attention to Institute work, and, having had training in hospital nursing as well as in dairying, she is well up on two subjects which are always interesting to an Institute audience.

Subjects: "Home and School," "School Luncheons," "The Reason Why in Butter Making," "Profit and Loss on the Dairy Farm," "Health in the Home," "Hints for the Home Nurse," "Domestic Education."

Miss Isobel Murray, St. Thomas.—Miss Murray is a graduate of the School of Domestic Science, and has had considerable experience in instruction work, as well as addressing Women's Institutes. Her demonstrations are very practical, and she has the faculty of instructing her audiences in food values, etc., at the same time that she is demonstrating.

Subjects: "Hygiene in the Home," "Planning and Decorating of the Home," "Woman as a Home Maker," "Educating the Children."

Demonstrations and recipes on the following: "Salads," "Soups," "Egg and Cheese Dishes," "Left-overs," "Beverages and Sandwiches," "Cold Desserts," "Meat and Fowl."

Miss Isobel Pease, 25 Bernard Ave., Toronto.—Miss Pease is a graduate in Domestic Science from the MacDonald Institute, and attended Institute meetings last summer with much acceptance to the members. Her demonstrations in remodelling hats and in the cutting and fitting of shirt waists were very much appreciated.

Subjects: "Hygiene, Ventilation and Sanitation," "Foods; the Choosing of a Diet," "Hints on Home Nursing."

Demonstrations in the following: "Cream Soups," "Meats," "Eggs and Milk," "Summer Desserts," "Remodelling of Hats," "Cutting and Fitting of Shirt Waists."

Mrs. Lilian Gray Price, 650 Bathurst St., Toronto.—Mrs. Price is a graduate of the School of Domestic Science at Toronto. Besides her regular talks on home and home-making, she is prepared to give practical demonstrations on the preparation of foods for the table. She also advocates a liberal diet of fruit, and her talk on "The Value of Fruit in our Diet" has been well received in the Institutes she has visited. We are pleased to be able to count on Mrs. Price for occasional meetings throughout the season, as the services of so acceptable and successful a demonstrator and lecturer cannot well be spared from the ranks of the Institute staff.

Subjects: "The Value of Fruit in our Diet," "Foods" (illustrated by charts), "Meats" (illustrated by charts), "Domestic Science on the Farm," "Making Home Attractive," "Every Man the Architect of His Own Fortune."

Mrs. Wm. Purves, Columbus.—Mrs. Purves has taken a deep interest in the Women's Institute of South Ontario since its organization, and it is largely due to her efforts that the work in that riding has progressed so favorably. Her experience as an officer, and the very practical addresses which she gives, make her a most acceptable delegate.

Subjects: "Preserving and Canning," "Household and Family Sewing," "Home," "Child Culture," "Consumption—Some Preventatives."

Miss Lulu Reynolds, Scarboro Junction.—Miss Reynolds is a daughter of one of our most energetic Farmers' Institute secretaries, and she herself has been secretary of the East York Women's Institute for some years. Miss Reynolds is a most enthusiastic worker, and her addresses upon the subjects announced are well received.

Subjects: "Hygiene and Sanitation," "Foods; their Different Constituents," "Horticulture," "Character Building."

Miss Isobel Rife, Hespeler.—Three years ago Miss Rife proved one of the most acceptable delegates to Women's Institutes, although it was her first experience in work of this kind. Previous to going out Miss Rife took a course in the MacDonald Institute at Guelph, and before that was a successful public school teacher. As well as being a capable and pleasing speaker, Miss Rife created a favorable impression in many places by her gift of song.

Subjects: "Helpfulness in Women's Institutes" (afternoon only), "Sunshine, Pure Air and the Bath" (afternoon only), "Consumption—Education, Prevention and Cure," "The Value of Physical Development," "The Home in its Attitude to the School," "The Hygiene of Cheerfulness," "Education for Girls."

Miss Laura Rose, Guelph.—Miss Rose is well and favorably known to most agricultural audiences of the Province of Ontario. She has charge of the Home Dairy Department at the Agricultural College, and has in the Guelph Dairy instructed thousands of farmers' daughters in the art of butter making. In the November-December series each year Miss Rose lends her services to Institute work, and occasionally during the winter, as she can be excused from her college work. For three years Miss Rose had charge of the Travelling Dairy in Nova Scotia, with marked success.

Subjects: "How to Make the Dairy bring in Larger Profits," "Defects we find in Butter; their Cause and Remedy," "Cheese; its Food Value and Simple Recipes," "Bread and Buns," "As Others See Us," "The Womanly Sphere of Woman," "The Head, the Hand, the Heart; the Tripod of Successful Work."

Miss Lillian Sheffield, 139 Havelock St., Toronto.—Miss Sheffield is a Normal graduate, and has taken a year's instruction in the Toronto Technical School. She is also a graduate of the MacDonald Institute at Guelph, and attended a series of Institute meetings in June last. Her addresses on food subjects and demonstrations in "Renovating of Hats" and "Cutting and Fitting of Shirt Waists" have proved of much interest.

Subjects: Cooking Demonstrations, "Invalid Cookery," "Puddings," "Soups," "Renovating Hats and their Trimming" (Demonstrated), "Hints for the Home Dressmaker" (Demonstrated), "Hints on Home Nursing" (Demonstrated), "Dressing as an Art" (Demonstrated), "Food and its Functions," "Health and Economy in the Home," "Methods of Cutting and Fitting Waists and Skirts."

Miss L. Shuttleworth, Guelph.—Miss Shuttleworth was born and brought up on a farm, and is familiar with the conditions surrounding Ontario farm life. Since graduation from Guelph Dairy School several years ago she has had extended experience in dairying and other lines which fit her particularly well to address Farmers' and Women's Institute meetings. Miss Shuttleworth has proved an acceptable delegate to Women's Institute meetings the last three seasons.

Subjects: "Cold Dishes for Summer Use," "Fruits; Methods of Canning, Preserving, etc.," "Short Talks and Discussions on Cream Separators, Dairy Utensils and their Care, Churning, Care of Milk and Cream," "The Needs of the Dairy Industry," "Evenings at the Homestead."

Miss Agnes Smith, Hamilton.—Miss Smith graduated from the Ontario Normal School of Domestic Science, Hamilton. She has been connected with Women's Institute work almost since its organization, and her practical demonstrations have helped thousands of women in Ontario on their farms. She is a graduate of the Dairy School at Guelph, and had charge of the domestic science and home dairy work at the Western Dairy School, Strathroy, for two seasons. Miss Smith is one of the most efficient workers sent out by the Department.

Subjects: "Principles of Cooking" (Demonstrated), "Meats; Composition and Cooking," "Food in its Relation to the Body," "Domestic Science," "The Sanitary Home," "The Needs of the Home of the Present Day," "Labor Problems of the Household," "The House: its Furnishing and Decoration," "A Plain Talk with Housekeepers."

Miss M. Stewart, 3 Washington Street, Toronto.—Miss Stewart has taken the full course in Domestic Science at the Lillian Massey School, and is now in her final year for the degree of B.A. in the University of Toronto. Miss Stewart attended Institute meetings last summer with much acceptance. She is a good demonstrator and a forcible and clear speaker.

SUBJECTS: "The Need for Variety in our Diet," "Some Necessary Precautions Against Disease" (evening), "Selection and Care of our Food," "A Girl's Education" (evening).

Demonstrations in the following: "Soups," "Egg, Cheese and Milk Dishes," "An Invalid's Tray," "Beverages and Sandwiches," "Cool Dishes for Summer Use."

MRS. HELEN WELLS, Syracuse, N.Y.—Mrs. Wells has attended Institute meetings in Ontario during the past two seasons, and her addresses on the subjects announced are most entertaining, instructive and convincing. The Department of Farmers' Institutes for New York State has engaged Mrs. Wells to conduct a series of Institute meetings for women in October and November, 1906. Mrs. Wells will be available for meetings in the summer of 1907.

SUBJECTS: "Home Hints," "What Shall the Child Read?" "Flowers for Busy People," "Sense and Nonsense," "The Value of Nature Study," "Roots or Branches, Which?" "The Air we Breathe?"

INFORMATION FOR OFFICERS AND DIRECTORS.

The large body of directors of Ontario Farmers' Institutes are conversant with the "Act, Rules and Regulations," relating thereto. It has been thought well, however, to reprint herewith portions of the same as well as some additional information of particular value in making arrangements for, and carrying out, the programme of winter meetings.

While the Executive Committee of each Institute, composed of the President, Vice-President and Secretary-Treasurer, must be entrusted with the carrying out of most of the details of the work, the individual director has a responsibility in conferring with the other directors, as to the general policy for the riding and in giving advice as to the subjects which should be taken up at the meeting or meetings in his locality. The director for a locality is considered as a member of the executive in making arrangements for his local meeting and in carrying out the same. Upon receipt of this volume, each director should look up the subjects announced for the speakers who will visit his locality, make a selection of those topics which will be of greatest interest in the community and notify the secretary accordingly. He should also give assistance in securing a suitable hall in which to hold the meeting. If arrangements can be made for the use of live stock in giving instruction upon the different class of animals, the meeting is sure to prove of great interest. The directors should also give personal invitations to their neighbors who do not usually take an interest in the meetings. A note to the local paper and signed by the local director will have the effect of creating an increased interest.

President.

It shall be the duty of the president to preside at all meetings of the board of directors and of the executive committee. In the absence of the president, the vice-president shall preside, and if both are absent a chairman shall be appointed by the committee.

The president should also be present at all Institute meetings, and preside at the same, or arrange with a local director to do so.

Secretary.

The secretary, as managing-director of the Institute, has, of course, to shoulder the responsibility and do by far the greater portion of the work. Each secretary should have a copy of "Act, Rules and Regulations," at hand at all times and consult the same frequently. Copies will be furnished to officers and directors upon application.

Below is given some general information of interest to all officers and directors:—

Advertising.

Do not, in any case, announce all the subjects upon which a speaker is capable of giving an address without indicating those which have been chosen for each meeting, or stating clearly that the audience will be given an opportunity of selecting one or two subjects from the list. An Institute delegate is not supposed to give an address upon more than one subject at any one session, although under special circumstances he may give a ten-minute talk upon a second subject for the purpose of introducing a discussion.

Every meeting of an Institute, except the annual meeting, should be advertised by issuing posters, not less in size than 15x20 inches, on which should be printed an attractive programme of the meeting, giving date and place of meeting, hour of opening, etc. A copy of said bill should be sent at least two weeks previous to the

date of meeting to each postmaster, each schoolmaster, each miller, each blacksmith, and to other places of public resort in the district, which are within a radius of ten miles of the place of meeting, with a request to post in a conspicuous place. It shall be the duty of the officers and directors to exercise diligence to ensure the proper posting of the said bills. In addition thereto, a programme or handbill of convenient size, containing similar information, should be distributed so as to reach its destination at least one week previous to date of meeting. A copy of said programme should be sent to each member of the Institute, to farmers, journalists, public men and others in the district who reside within ten miles of the place of meeting. Such posters and programmes should announce that all interested are welcome, whether members of the Institute or not. Copies of said programmes should be sent to the school teachers in the district, with the request that they be carefully distributed among the children.

Furnishing of Hall.

A suitable hall should be secured at each place of meeting, and the local director should make it his special business to see that the hall is in readiness, and properly heated, at least half an hour before the time of meeting. If provision could be made to hold the afternoon session in such a place that live stock could be utilized in illustrating the remarks of the lecturer, it would be found to materially add to the interest and profit of the meeting.

Commence Meetings on Time.

We trust that Institute officers and directors will make a special effort to get the people to the meetings on time. It is a matter of general regret on the part of Institute lecturers that the audience is usually late in reaching the place of meeting. This, of course, detracts from the effectiveness of the work, as many of the farmers in attendance require to go home between the afternoon and evening sessions, and any delay at the beginning means so much time taken from the session. A Question Drawer at the beginning of the session, based upon the topics announced for the speakers, is advisable. It is well to have strips of paper handed to the audience as they arrive at the hall, and when the hour for the opening of the meeting has arrived they should be collected and handed to the head of the deputation. A Question Drawer for a half hour, or even longer, at the evening session is a profitable way of filling in the first part of the programme while the late comers, and there are always sure to be some, are arriving.

Each deputation will be furnished with more or less illustrative material, and this will usually be on exhibition at the beginning of the session and will be found of much interest by the majority of the audience.

Conference of Institute Lecturers.

At the Institute Conference to be held in November, the speakers will derive much benefit from conversing with each other, and in hearing matters of general interest regarding Institute work discussed. The lecturers will also be furnished with considerable illustrative material, and will go to their work better equipped than ever before for the duties at hand.

Farmers' Institute Clubs.

We trust that many of the Institutes will form local clubs for the study and discussion of subjects which are of interest to the farmers. A number of these clubs

were formed last winter and for the most part the work undertaken has proved of great interest and benefit. Below is given

Suggested Rules and Regulations for the Formation and Conducting of Farmers' Institute Clubs.

(1) The organization of a Farmers' Institute Club may take place at a regularly called Farmers' Institute meeting or at a meeting called for the special purpose. At least two weeks' notice of a specially called meeting must be given in the local papers or by poster; and all members shall be constituted members of the Farmers' Institute for the riding by paying the annual fee of 25 cents; said fee, with name and address, to be sent to the secretary of the Riding Institute. By the consent of the District Executive, five or ten cents per member may be retained for local purposes. Only members will be allowed to hold office or have a vote in elections. All farmers will be made welcome to meetings and have a voice in discussions.

(2) Those in attendance at the organization meeting should appoint a President, Vice-President, Secretary-Treasurer, and a committee of four or more. The committee should consist of about an equal number of old and young men. At each meeting one of the committee should drop out and be replaced by one elected by the meeting.

(3) The president shall preside at all meetings; in his absence the vice-president; in the absence of both, the members in attendance shall choose a chairman from among themselves (a member of the committee preferred).

(4) The committee shall arrange for the hour and place of each meeting, subjects to be discussed, speakers, etc. It would be well to have subjects to be taken up from time to time approved of by the meeting.

(5) Any expense incurred in providing a suitable place of meeting shall be covered by a collection; or, preferably, an additional fee, in case the proportion of regular fee retained does not cover expenditure.

(6) The proceedings of each meeting shall be recorded by the secretary, and a report of membership and other items of interest sent to the secretary of the Riding Institute at least every three months.

(7) No subject shall be presented at a Club meeting, or discussion allowed, of a political or sectarian nature.

(8) It would be well to make provision at some of the meetings, if not all, for recitations or music, to occupy a limited portion of the time.

KEY TO REGULAR AND SUPPLEMENTARY MEETINGS TO BE HELD BETWEEN NOVEMBER 26TH, 1906, AND MARCH 8TH, 1907.

R: Regular Meetings. S: Supplementary Meetings.

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KEY TO MEETINGS TO BE ATTENDED BY SPEAKERS FROM NOVEMBER 26, 1906, TO MARCH 8, 1907.

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FARMERS' INSTITUTES OF ONTARIO.

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	Sec.-Treas.	D. Ure	Windsor.

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	Sec.-Treas.	J. B. Brien	Ridgetown.
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	Vice-President	Frank Suitor	Chatham.
	Sec.-Treas.	J. R. Longmore	Chatham.
Lambton, E.	President	Jno. Hunter	Wyoming.
	Vice-President	Milton Moorehouse	Shetland.
	Sec.-Treas.	W. J. McAlpine	Warwick.
Lambton, W.	President	Wm. Jackson	Osborne.
	Vice-President	Frank C. Pretty	Wilkesport.
	Sec.-Treas.	Frank Young	Ladysmith.

OFFICERS FOR 1906-7.—*Continued.*

Institnte.		Name.	P.O. Address.
Lanark, N. (Officers for 1905).	President	Hugh Wilson	Elphin.
	Vice-President	Wm. Dunlop	McDonald's Corner
	Sec.-Treas.	Jas. Balfour	Elphin.
Lanark, S.	President	W. J. Leaver	Perth.
	Vice-President	Wm. McNaughton	Balderson.
	Sec.-Treas.	Geo. Oliver	Perth.
Leeds, N., and Grenville	President	Andrew Carson	Burritt's Rapids.
	Vice-President	J. B. Arnold	Easton's Corners.
	Sec.-Treas.	F. A. J. Davis	Merrickville.
Leeds, S.	President	W. M. Bass	Newboro.
	Vice-President	C. F. Rath	Lansdowne.
	Sec. Treas.	Freeman Britton	Gananoque.
Lennox	President	T. B. Lund	Napanee.
	Vice-President	Robt. Metzler	Odessa.
	Secretary	D. Aylesworth	Bath.
	Treasurer	W. N. Dollar	Napanee.
Lincoln	President	S. H. Rittenhouse	Jordan Harbor
	Vice-President	D. H. Moyer	Campden.
	Sec.-Treas.	J. Pawling	Pt. Dalhousie.
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	Vice-President	Geo. Hughson	Manitowaning.
	Sec.-Treas.	A. J. Wagg	Mindemoya.
Manitoulin, W.	President	Fred Smith	Gore Bay.
	Sec.-Treas.	And. Hall	Gore Bay.
Middlesex, E.	President	A. A. Dodds	Derwent.
	Vice-President.	S. Bourne	Rebecca.
	Sec.-Treas.	J. H. Wheaton	Thorndale.
Middlesex, N.	President	Richard Tweddle	Nairn.
	Vice-President	Dugald Graham	Ivan.
	Sec.-Treasurer	Wm. T. Amos	Lieury.
Middlesex, W	President	L. G. Lethbridge	Strathburn.
	1st Vice-President.	Jno. Mitchell	Glencoe.
	2nd Vice-President	Hugh McCallum	Walkers.
	Sec.-Treas	Chas. M. Macfie	Appin
Monck	President	Allan Robins	Wellandport.
	Vice-President	Gavin Henderson	Perry Station
	Sec.-Treas	J. E. Cohoe	Wellandport.
Muskoka, C	President	Alfred Kay	Port Sydney.
	Vice-President	Edward Hamilton	Raymond
	Sec.-Treas	John Wilson	Utterson.
Muskoka, N.	President	T. Bradley	Huntsville, Box 46.
	Vice-President	W. D. Forest	Huntsville, Box 151.
	Sec.-Treas	Wm. Clark	Huntsville, Box 3.
Muskoka, S.	President	W. C. Denniss	Bracebridge.
	Vice-President	Jno. J. Beaumont	Bracebridge.
	Sec.-Treas.	Alex. Barron	Bracebridge.
Port Carling.	President	Jos. McCully	Port Carling.
	Vice-President	Robt. Trouten	Brackenrig.
	Sec.-Treas	Geo. Terry	Hutton House.
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	Vice-President	Wm. Guthrie	Warren.
	Secy-Treas.	Jno. A. Carmichael	North Bay.
Norfolk, N.	President	W. A. Byerley	Courtland.
	1st Vice-President	S. C. Kitchen	Bloomsburg.
	2nd Vice-President	L. O. McConnell	Delhi.
	Sec.-Treas.	F. L. Culver	Waterford.
Norfolk, S.	President	Jas. Symington	Port Dover.
	Vice-President	Abram Neilson	Walsh.
	Secy-Treas.	N. S. Palmerston	Walsh.
Northumberland, E.	President	R. O. Morrow	Hilton.
	Vice-President	J. N. Stone	Norham.
	Sec.-Treas.	H. H. Bate	Brighton.

OFFICERS FOR 1906-7.—*Continued.*

Institute.		Name.	P.O. Address.
Northumberland, W	President	Thos Hoskin	The Gully.
	Vice-President	Jno. Mason	Cobourg.
	Sec.-Treas.	R. Cullis	Camborne.
Ontario, N.	President	Wm. Shier	Sunderland.
	1st Vice-President	Asa Millard	Altona.
	2nd Vice-President	I. C. Sproule	Cannington.
	Sec.-Treas.	Jos. E. Gould	Uxbridge.
Ontario, S.	President	J. L. Smith	Whitby.
	Vice-President	Jas. McFarlane	Claremont.
	Sec.Treas.	Elmer Lick	Oshawa.
Oxford, N.	President	David Lawrence	Thamesford.
	1st Vice-President	Herman Bollert	Cassel.
	2nd Vice-President	Arthur King	Plattsville.
	Sec.-Treas.	A. L. Currah	Bright.
Oxford, S.	President	J. H. Forden	Beachville.
	Vice-President	J. W. Cohoe	New Durham.
	Sec.-Treas.	W. R. Carroll	Norwich.
Parry Sound, E.	President	Jno. Duke.	Burk's Falls.
	Vice-President	Jno. Paget	Sundridge.
	Sec.-Treas.	Thos. Bottomley	South River.
Parry Sound, W.	President	C. Sarney	Parry Sound.
(Officers for 1905)	Vice-President	W. H. Bundy	Parry Sound.
	Sec.-Treas.	R. Reece Hall	Parry Sound.
Peel	President	P. G Dunton	Britannia.
	1st Vice-President	E. C. Monkman	Castlederg.
	2nd Vice-President	J. C. McArthur	Brookside.
	Sec.-Treas	T. J. Cumberland	Brampton.
Perth, N.	President	Geo. Goetz	Sebringville.
	Vice-President	Jno. Munro	Milverton.
	Sec.-Treas.	S. H. Pugh	Milverton.
Perth, S.	President	J. W. Pearn	St. Mary's.
	Vice-President	D. McBeth	St. Pauls.
	Sec.-Treas.		
Peterboro, E.	President	F. Birdsall	Birdsall.
	Vice-President	E. Hawthorne	Warsaw.
	Sec.-Treas.	Chas. O'Reilly	Norwood.
Peterboro, W.	President	J. N. Telford	Bridgenorth.
	Vice President	Fred McKee	Selwyn.
	Sec.-Treas.	Wm. Collins	Peterboro, Box 926.
Prescott	President	Jonathan Cross	Caledonia Springs.
	Vice-President	John Johnston	Little Rideau.
	Sec.-Treas.	W. Macadam	Vankleek Hill.
Prince Edward	President	A. M. Clark	South Bay.
	Vice-President	P. N. Gilbert	Gilbert's Mills.
	Sec.-Treas.	W. A. Christy	Bloomfield.
Rainy River, S.	President	Geo. Strachan, Sr	Box Alder.
	Vice-President	Jno. Ritchie	Barwick.
	Sec.-Treas.	T. A. Boucher	Emo.
Renfrew, N.	President	O. Wright	Beachburg.
	Vice-President	John Collins	Beachburg.
	Sec.-Treas.	John Brown	Beachburg.
Renfrew S.	President	D. Muirhead	Renfrew.
	Vice-President	D. Barr, Sr	Renfrew.
	Sec.-Treas.	G. MacIntyre	Renfrew.
Russell	President	Hon. W. C. Edwards	Rockland.
	1st Vice-President	D. McDonald	Pana.
	2nd Vice-President	N. F. Wilson, M.P.	Cumberland.
	Sec-Treas.	W. R. Craig	Russell.
Simcoe, C.	President	R. Graham	Saurin.
	Vice-President	Jno. Anderson	Crossland.
	Sec-Treas.	Wm. Pratt	Penetang.
Simcoe E.	President	E. W. Kitchen	Lovering.
	Vice-President	J. S. Nelson	Price's Corners.
	Sec.-Treas.	R. A. Lehmann	Orillia.

OFFICERS FOR 1906-7.—*Concluded.*

Institute.		Name.	P.O. Address.
Simcoe, S.	President	Jno. Semple	Tottenham.
	Vice-President	J. A. Kidd	Cookstown.
	Sec.-Treas	W. J. Lennox	Newton Robinson.
Simcoe, W.	President	J. A. McDermid	Stayner, Box 164.
	1st Vice-President	Jno. Smith	Duntroon.
	2nd Vice-President	David Smith	Smithdale.
	Sec-Treas.	Jno. McKee	Duntroon.
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	Vice-President	J. G. Reesor	Carterton.
	Sec-Treas.	Albert Young	Richard's Landing.
Temiscamingue Dist.	Secretary	R. Parker	Uno Park.
Victoria, E.	President	W. H. Cullis	Powle's Corners.
	Vice-President	Isaac Fee	Mt. Pleasant.
	Sec.-Treas	Wm. Thurston	Bobcaygeon.
Victoria, W.	President	Wm. Channon	Oakwood.
	Vice President	Donald Jackson	Woodville.
	Sec-Treas.	Jas. Keith	Lindsay.
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	1st Vice-President	A. Doering	Crosshill.
	2nd Vice-President	Josiah Stauffer	Waterloo.
	Sec.-Treas.	Allen Shantz	Waterloo.
Waterloo, S.	President	J. D. Newstead	Preston.
	1st Vice-President	W. C. Shaw	Hespeler.
	2nd Vice-President	S. S. Herner	Mannheim.
	3rd Vice-President	Walter Oliver	Branchton.
	Ass't Sec.	C. D. Brown	Haysville.
	Secretary	Wm. Slater	Galt.
Welland	President	Chas. E. Sauer	Chippewa.
	Vice-President	Wallace Felts	Welland Station.
	Sec.-Treas.	W. H. Gainer	Welland.
Wellington, C.	President	R. J. Kerr	Mimosa.
	Vice-President	And. Thomson	Fergus.
	Sec.-Treas	R. D. Nodwell	Hillsburg.
Wellington, E.	President	Alfred Hutchison	Mount Forest
	Vice-President	D. McKenzie	Cedarville.
	Sec-Treas.	Chester Nicholson	Mount Forest.
Wellington, S.	President	Jno. Barber	Guelph.
	1st Vice-President	Wm. Scott	Eramosa.
	2nd Vice-President	J. A. Cockburn	Aberfoyle.
	Sec.-Treas.	G. B. Hood	Guelph.
Wellington, W.	President	E. S. Wooddissee	Rothsay.
	Vice-President	F. J. Short	Moorefield.
	Sec.-Treas.	S. M. Clemons	Drayton.
Union	President	Alex. Drummond	Clifford
	Vice-President	Jno. Pritchard	Redgrave.
	Sec.-Treas.	David Campbell	Clifford.
Wentworth, N.	President	T. B. Watson	Kirkwall.
	1st Vice-President	G. N. Harris	Lynden.
	2nd Vice-President	J. A. Gray	Freelton.
	Sec-Treas.	Alfred Purnell	Puslinch.
Wentworth, S.	President	Jno. Clough	Binbrook.
	Vice-President	J. H. McNeilly	Stoney Creek.
	Sec.-Treas.	Erland Lee	Stoney Creek.
York, E.	President	Jno. Kennedy	Agincourt.
	1st Vice-President	Geo. Robinson	Markham.
	2nd Vice-President	Geo. Robins	Malvern.
	3rd Vice-President	J. E. Elliott	Lansing.
	Sec.-Treas.	A. J. Reynolds	Scarboro Jct.
York, N.	President	Luke Gibbons	Glenville.
	Vice-President	Archie McCallum	Laskay.
	Sec.-Treas.	F. W. Heacock	Aurora.
York, W.	President	T. A. Farr	Thistletown.
	Vice-President	A. T. Orth	Kleinburg.
	Sec.-Treas.	R. L. Crawford	Emery.

Annual Report

OF

The Agricultural Societies of Ontario

(Fairs and Exhibitions)

For the Year

1906

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1906.

WARWICK BRO'S & RUTTER, LIMITED, PRINTERS,
TORONTO.

To the Honorable WILLIAM MORTIMER CLARK, K. C.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOR:

I have the pleasure to present herewith for the consideration of your Honor the Report of The Agricultural Societies of Ontario (formerly Fairs and Exhibitions) for the year 1906.

Respectfully yours,

NELSON MONTEITH,
Minister of Agriculture.

TORONTO, 1906.

ANNUAL REPORT OF THE

Agricultural Societies of Ontario.

1906.

To the Honorable the Minister of Agriculture:

Sir,—I have the honor to present herewith my second annual report including the sixth anual report of the Ontario (formerly Canadian) Association of Fairs and Exhibitions.

In addition to the report concerning the work of the Fairs Branch of the Department of Agriculture presented at the annual convention of the Fairs and Exhibitions Association, will be found a statement relating to the laws governing the agricultural societies in the New England and Central Middle States of the Union, visited by me at your request, a report concerning the two illustration fairs held last year under the direction of the Department, information relating to the ownership of live stock and the holding of spring stallion shows by agricultural societies, a description of exhibition buildings owned by various societies in Ontario and illustrations of same, and a few remarks descriptive of special features and lines of work attempted with success by different societies throughout the Province.

Trusting that this information may be of value, I have the honor to be, Sir,

Your obedient servant,

H. B. COWAN,
Superintendent of Agricultural
Societies for Ontario.

Ontario Association of Fairs and Exhibitions.

OFFICERS FOR 1906.

President: J. W. Sheppard, Cayuga.
First Vice-Pres.: Jas. Mitchell, Goderich.
Second Vice-Pres.: Wm. Laidlaw, Guelph.
Recording Secretary and Treasurer: Alex. McFarlane, Otterville.
Corresponding Secretary and Editor: H. B. Cowan, Toronto.

Directors:

John Farrell, Forest; W. B. Sanders, Stayner; J. Thos. Murphy, Simcoe; Chas. Walker, Erin; J. M. Knowles, Dundas; R. Graham, Elmvale; A. Alexander, Burk's Falls; G. E. Lee, Highgate.
Auditors: D. Hughes Charles, Peterboro; Jos. Hudspeth, Caledonia.

DELEGATES IN ATTENDANCE.

Name.	P. O Address.	Society.
Andrews, C. H	Streetsville	Toronto.
Allen, William	Holstein	Egremont.
Allen, F. T	Hampton	Darlington.
Alexander, Wm	Burk's Falls	East Parry Sound.
Andrews, James C	Cobourg	West Northumberland.
Atkinson, Chas	Caledon	Caledon.
Aylesworth, J. B	Newburgh	East Camden.
Aylesworth, B. M	do	do
Buffton, Chas	Niagara	Niagara Town & Township.
Brock, John	Thorndale	West Nissouri.
Bryan, J	Lucknow	Kinloss.
Blowes, A. J	Mitchell	Mitchell Horticultural.
Bottomley, Thos	South River	Machar.
Braden, A	Bobcaygeon	Verulam.
Bailie, Wm	Dungannon	Ashfield.
Broderick, J	Mitchell	Mitchell and Logan.
Bruce, David	Beaverton	Thorah.
Berry, Wm	Port Hope	Hope and Port Hope.
Brethour, James	Sunderland	Brock.
Bowers, J	Ripley	Huron.
Bowers, Ray	do	do
Brien, J. D	Ridgetown	Howard.
Brock, W. A	Petrolea	Petrolea and Enniskillen.
Black, W. D	Parham	Hinchinbrooke.
Bowman, Robert	Humber	Toronto Gore.
Bradwin, A. E	Blyth	Morris.
Brockbank, John	Paris	North Brant.
Birdsall, A	Birdsall	East Peterboro.
Baylis, John	Mt. Dennis	West York.
Baty, Thomas	London, South	Western.
Berry, Robert	St. Mary's	South Perth.
Bonis, Daniel	do	do
Banslaugh, F	Waterford	Townsend.
Bastedo, D. E	Bracebridge	South Muskoka.
Bowlby, A. D	Windsor	Windsor.
Clark, W. F	Grimsby	Grimsby.
Channon, Wm	Oakwood	South Victoria.
Crow, W. A	Chesley	Chesley.
Carter, R. N	South River	Machar.
Campbell, Arch	Shanty Bay	Oro.
Campbell, G. H	do	do
Craig, J. J	Fergus	Centre Wellington.
Clay, R	Burk's Falls	East Parry Sound.
Cooney, J	Brampton	Peel.
Clarridge, H. C	do	do
Cooper, J. A	Dundalk	Proton.
Chesterfield, H	do	East Northumberland.
Cruikshank, S. E	Orangeville	Dufferin.
Caister, E	Tavistock	East Zorra.
Charles, D. Hughes	Peterboro	Peterboro Industrial.
Cowan, R. E	Galt	South Waterloo.
Coo, E. R		
Coo, R		
Close, W. J	Belwood	West Garafraxa.
Carman, A	St. Marys	South Perth.
Crew, A. W	Fenwick	Pelham.
Cumberland, Barlow	Port Hope	Hope and Port Hope.
Clark, J. W	Tillsonburg	Dereham.
Clary, W	Cobourg	West Northumberland.
Dench, R. L	Lakefield	Lakefield.
Douglas, Jno	Tara	Arran.
Downey, George	Bolton	Albion and Bolton.
Deans, Wm	Fergus	Centre Wellington.
Dolson, H. A	Norval	Peel.

DELEGATES IN ATTENDANCE.—*Continued.*

Name.	P. O. Address.	Society.
Davison, J. H	Cobourg	West Northumberland.
Dempsey, J. W	Fairview	North Perth.
Dodds, George	Gordonville	Arthur.
Driscoll, Jos	Arthur	do
Duncombe, O. H	Waterford	Townsend.
Ellis, J	Lindsay	South Victoria.
Ewart, I	Chesley	Chesley.
Ewart, S. K	do	do
Evans, David	Strathroy	West Middlesex.
Ellis, E. J	Orangeville	Dufferin.
Falconer, Wm	Tara	Arran.
Feasby, Thos	Uxbridge	North Ontario.
Fisher, J. D	Baden	Wellesley.
Field, R. H	Brockville	Brockville.
Farrell, John	Forest	East Lambton.
Flint, J. B	Belleville	East Hastings.
Griffin, A. C	Waterdown	East Flamboro.
Gee, W. C	Wyton	West Nissouri.
Graydon, W. J	Streetsville	Toronto.
Garrow, G. N	Uxbridge	Uxbridge.
Gainer, W. H	Welland	Welland.
Goodfellow, G. A	Dundalk	Proton.
Gough, E	Powassan	North Parry Sound.
Goring, F. A	Homer	Lincoln.
Gilbert, Albert	Simcoe	South Norfolk.
Gilbert, A	do	do
Gow, J. R	Wallacetown	West Elgin.
Gregg, Samuel	Ingersoll	South Oxford.
Graham, R	Elmvale	Flos.
Garvie, Alex	Kilsyth	Derby.
Goetz, Geo	Sebringville	North Perth.
Gray, George	Newcastle	West Durham.
Gould, H. J	Uxbridge	North Ontario.
Hudspeth, Jos	Caledonia	Caledonia.
Harkness, T. J	Owen Sound	North Grey.
Holmes, Wm	Comber	Tilbury West and North.
Hickson, Wm	Bobcaygeon	Verulam.
Henderson, J. M	Strathroy	West Middlesex.
Holwell, F	Baden	Wilmot.
Hoar, H. C	Hampton	West Durham.
Henderson, T. S	Rockton	North Wentworth.
Henderson, M	do	do.
Hyatt, A	Pelham Centre	Pelham.
Hyatt, I. M	do	do.
Hare, C. B	Homer	Lincoln.
Hanmer, D. G	Burford	Burford.
Henderson, W. C	Kilsyth	Derby.
Hammell, W. H	Beeton	Cardwell.
Hewer, James	Guelph	Guelph Central.
Henderson, G. G	Hamilton	South Wentworth.
Houston, John	Chatham	West Kent.
Johnson, Jas	Ohsweken	Six Nations.
Johnson, J. H	Fordwich	Howick.
Johnson, M. J	do	do.
Johnston, M. O	Goderich	West Huron.
Keene, J. S	Elmira	Woolwich.
Knowles, J. M	Dundas	North Wentworth.
Kennedy, D. B	Bolton	Albion and Bolton.
Kerr, W. H	Brussels	Grey Tp.
Kelly, H	Baden	Wellesley.
Kneeshaw, J	Bradford	Bradford.
Lytel, E	Victoria Road	North Victoria.
Lindsay, Jno	Owen Sound	North Grey.
Lindsay, A. J	Ballinafad	Erin.
Lee, George E	Highgate	Orford.
Laidlaw, Wm	Guelph	South Wellington.

DELEGATES IN ATTENDANCE.—*Continued.*

Name.	P. O. Address.	Society.
Mitchell, James	Goderich	West Huron.
Murphy, J. Thos	Simcoe	Norfolk Union.
Miller, F. H	Dundas	North Wentworth.
Ming, E	Napanee	Lennox.
Marsh, J. E	Markdale	Glenelg.
Moosley, J. F	Parry Sound	West Parry Sound.
Meads, W. J	Ceylon	Artemesia.
Moffatt, W	Picton	Prince Edward.
Martin, G. A	Ohsweken	Six Nations.
Moore, W. T	Meaford	St. Vincent.
Murney, Wm	Goderich	West Huron.
Murney, S. G	do	do.
Morrison, D	Elmvale	Flos.
Metcalf, F	Blyth	Morris.
Moody, W. J	Berlin	North Waterloo.
Miller, Geo. L	Jarvis	Walpole.
McClung, Thos	Cayuga	Haldimand.
McDowell, Wm	Comber	Tilbury West and North.
McGregor, Alex	Desboro	Sullivan.
McGuire, Wm	Waterford	Townsend.
McIntyre, W	Beaverton	Thorah.
McArthur, Jno	do	do.
McMillan, D	Priceville	Artemesia.
McDonald, A	Shelburne	Dufferin Central.
McKinley, D. F	Ridgetown	Howard.
McKay, J. M	Harriston	Minto.
McCallum, J. M	Shakespeare	East Zorra.
McFarlane, Alex	Otterville	South Oxford.
McGuire, Chas	Cobourg	West Northumberland.
McKee, Geo	Sebringville	North Perth.
McMillan, Jno	Palmerston	North Wallace.
McNamara, Wm	Hawtrey	South Norwich.
McDonald, H	Belwood	West Garafraxa.
McMahon, W. H	Wyoming	Plympton.
McAllister, D	Binbrook	Binbrook,
McTavish, D	Flesherton	East Grey.
McNeilly, J. H	Stoney Creek	Saltfleet.
McQueen, T. K	Elora	Pilkington.
McCool, Jno	Waterford	Townsend.
Nix, C. H	Uxbridge	North Ontario.
Naylor, Isaac	Islay	Fenelon.
Naftel, T. C	Goderich	Goderich Hort.
O'Reilly, Chas	Norwood	East Peterboro.
O'Neail, H. C	Paris	North Brant.
Orr, John	Streetsville	——
Oliver, R. S	Branchton	South Waterloo.
Oliver, R	do	do.
Palmerton, N. S	Walsh	South Norfolk.
Petrie, W. A	Elora	Pilkington.
Price, D. H	Aylmer	East Elgin.
Price, A. M	do	do
Price, E	do	do
Pritchard, R. T	Fergus	Centre Wellington.
Pearson, H	Weston	West York
Purvis, R. A	Sunderland	Brock.
Payne, Jos	Moore	Moore.
Prain, John	Harriston	West Wellington.
Pursell, F. R	Simcoe	North Norfolk.
Quinlan, D	Barrie	West Simcoe.
Russell, W. S	Tavistock	East Zorra.
Randall, J. W	Niagara	Niagara T. and T.
Randall, W. F	Grimsby	Grimsby.
Reekie, Wm	Camperdown	Collingwood.
Ryder, Jas	Parry Sound	West Parry Sound.
Raycroft, T. C	Highgate	Orford.
Ross, D	Welland	Welland.

DELEGATES IN ATTENDANCE.—*Continued.*

Name.	P.O. Address.	Society.
Reaman, M.	Woodbridge	West York.
Reed, Daniel	Glanford	South Wentworth.
Robotham, G. D.	Strathroy	Adelaide.
Sheppard, J. W.	Cayuga	Haldimand.
Stock, W. E.	Waterdown	East Flamboro.
Saul, H. B.	Caledonia	Caledonia.
Spier, Jas.	Brussels	Grey.
Spoor, R. J.	Wolfe Island	Wolfe Island.
Smith, Jas. D.	Baysville	McLean.
Stothers, Thos.	Dungannon	Ashfield.
Stratheras, B. T.	Shanty Bay	Oro.
Sproule, R. J.	Flesherton	East Grey.
Stanton, Sid.	Picton	Prince Edward.
Sharp, W. J.	Holstein	Egremont.
Smith, A.	Shelburne	Dufferin Central.
Smith, A. N.	Meaford	St. Vincent.
Stokes, John.	Tweed	Hungerford.
Sutton, D.	Millbrook	Cavan.
Sawtell, R. G.	Woodstock	North Oxford.
Smith, Jas.	Colinville	Moore.
Stevenson, A.	Atwood	Elma.
Sovereign, A.	Simcoe	North Norfolk.
Smith, A. H.	do	South Norfolk.
Sanders, W. B.	Stayner	Sunnidale.
Sanders, W.	do	do
Simmons, Dr.	Frankford	West Hastings.
Sullivan, M. S.	do	do
Trueman, T. J.	Midland	Tiny and Tay.
Tidball, Robt.	Thedford	Bosanquet.
Trotter, J. O.	Woodstock	North Oxford.
Teefer, T. S.	Drumbo	Blenheim.
Tathan, A.	Listowel	South Wallace.
Tathan, E.	do	do
Tucker, Geo.	Drayton	Peel and Drayton.
Vance, Robert	Ida	East Dereham.
Verrall, G. W.	Weston	West York.
Willoughby, John	Sundridge	Strong.
Wilson, Geo.	Drayton	Peel and Drayton.
Walker, C. H.	Erin	Erin.
Wade, G.	Dorchester Station	North Dorchester.
Wyant, G. V.	Petrolea	Enniskillen.
Wright, W.	Cobourg	West Northumberland.
Watson, J. I.	Kilmanagh	Caledon.
Wiggins, H.	Nottawa	Nottawasaga.
Wilson, J. F.	Listowel	South Wallace.
Wilson, J. C.	do	do
Wallace, T. F.	Woodbridge	West York.
Winslow, G. H.	Milbrook	East Durham.
Whitworth, E. J.	Binbrook	Binbrook.
Wood, W.	Bradford	Bradford.
Weston, John.	Tillsonburg	Durham.
Young, Jon. M.	Harriston	West Wellington.
Yearlings, C.	Thedford	Bosanquet.
Yearley, Geo.	Bracebridge	South Muskoka.
Zilliax, Harry	Elmira	Woolwich.

ONTARIO ASSOCIATION OF FAIRS AND EXHIBITIONS.

ANNUAL MEETING.

The annual meeting of the Association was held in the City Hall, Toronto, on February 21st and 22nd, 1906. The meetings on the first day were held in one of the large committee rooms, but the attendance of delegates being very large it was found necessary on the following day to hold the meetings in one of the court rooms, which proved to be none too large.

Although the attendance at the session in 1905 was the largest in the history of the association up to that date, the attendance this year again broke the record. Two hundred and fifty delegates registered. These were from all parts of the Province.

Great interest was manifested in the different discussions in each of which the delegates participated freely. A great deal of time was wasted at the afternoon session of the second day in the election of officers, which was conducted openly by nomination and ballot. This session was practically lost owing to the amount of time taken up with this work. A notice of motion was given advising a change in the constitution by which future conventions may elect the officers upon the report of a nominating committee.

Throughout the convention a great deal of interest was manifested in the Bill it was known was to be introduced in the Ontario Legislature in regard to the work of agricultural societies, but as the Bill had not been presented to the House the members were not afforded an opportunity of discussing its provisions.

The discussions were of the most helpful and instructive nature of any in the history of the Association, and the delegates returned home feeling that they had been benefitted by their attendance at the convention.

PRESIDENT'S ADDRESS.

By J. W. Sheppard, Cayuga, Ont.

In welcoming you to the eighteenth annual meeting of our Association, I take this opportunity of thanking all members of the executive, and others who have assisted me in carrying on our affairs during the past year. I trust that our deliberations at this annual meeting will be productive of great good to the societies we represent and to the agricultural interests of the Province.

Immediately after the last annual meeting, the matter of single fare for delegates attending the annual meetings of our association each year, was taken up with the Eastern Canadian Passenger Association and the concession we have striven for so long has been granted, viz., certificate plan fare arrangements on Form 6, excepting that delegates will be returned free, regardless of number in attendance, certificates to be vised and a fee of twenty-five cents charged. An officer of the railway association will attend

our meeting on the second day to vise these certificates. This concession I may say applies to all conventions, but I think largely through the efforts of our Association it has been secured.

I regret to report that since our last meeting our eastern brethren have seen fit to form the Eastern Ontario Fairs Association, and held their first organization meeting in the City of Ottawa on March 9th last. I notice in the report of that meeting that the chairman stated that the object was to cut loose from all other associations, and defined "Eastern Ontario" to mean "that portion of the Province east of Kingston." The proposal to divide the Province into two parts, having one Association in the east and one in the west, was introduced at our last annual meeting, and after being fully discussed was negatived almost unanimously. I still am firmly of opinion that the interests of the Agricultural Societies throughout Ontario would be better served if we had only one Fairs Association, and I trust that our eastern brethren will yet agree with me on this point. In this connection I might suggest that a committee be appointed to wait upon the Minister of Agriculture and urge that the Department pay the railway fare of one delegate from each society when attending the annual meeting. This would, to a large extent, reduce the agitation for the organization of other Fairs Associations in different parts of the Province. The railway fare is a large item in the expenses of delegates from Agricultural Societies in the outlying parts of the Province. I understand the Horticultural Societies have approached the Minister of Agriculture with this object in view, and that as a matter of fact the expenses of the directors of the Dairymen's and Fruit Growers' Associations, and other Provincial organizations are always paid to their annual conventions.

In view of the proposed change in the distribution of the Government grants, I would strongly urge the appointment of a Provincial auditor of fair books. Besides tending to the more uniform and correct methods of keeping the books such an officer would be valuable in giving the necessary instructions to ensure correct annual reports being sent to the Department, and further he would be the means of protecting the interests of all societies in an equitable distribution of the Government grants on the basis of money expended for purposes of agriculture only, if such basis is to be adopted in the proposed new Act. I trust that if the Government introduces a new Agriculture and Arts Act that they will keep in view the interests of societies in the remote farming districts, who are not favored by railway facilities, or located near large centres, to ensure the attendance of large crowds, and large gate receipts, who are nevertheless doing far better and grander work amongst farmers than where city folks and the sporting gentry attend fairs for entertainment, excitement and a day's pleasure. With all due respect I would say here, that such societies have "got out of their swaddling clothes and are on their feet," and, therefore, do not need any further financial assistance from the Government.

It appears to be the practice for some societies to still award prizes for male grade stock, although the necessity for doing so in Ontario has long since passed away. I think this Association should strongly condemn this practice, and recommend to the Government the advisability of preventing societies continuing their practice in this respect.

A programme has been arranged of such a character as I hope will be of interest to every delegate attending this annual meeting, and an invitation is extended to each and every one to bring forward at the proper time any idea or resolution that will be a benefit to the society we represent, and I trust that our Association will continue to exert great influence in

improving the status of such societies in this great Province of Ontario, the greatest commonwealth in the diadem of Britain's crown.

In conclusion I desire to say in all sincerity, that it would be an act of ingratitude if I did not express on behalf of this Association our appreciation of the able, energetic and obliging service of our Superintendent, Mr. H. B. Cowan, during the past year. He has been ever ready at all times to assist your executive, and the marked success he has attained in the duties of his office deserves great praise.

Discussion on the President's Address.

James Mitchell, Goderich: At former Association meetings it has been customary to refer the report of the president to a committee, who would report upon it and then the discussion took place on their recommendations. Whether or not this new plan will work out all right remains to be seen. I do not know that here is very much that I can say with reference to it, but I would like to congratulate you upon the large attendance that we have. We have not had any such meeting of this Association since its organization. This is the banner attendance in the history of the Association. (Applause.) With reference to the Eastern Association, I am not quite sure that the formation of two associations in this Province is desirable. The matter was so well discussed at our last annual meeting that I thought that would have settled it and we should not have had to face further discussion. It may be, as the president has suggested in his address, that some arrangement by which the expenses would be reduced for the cost of delegates attending the meetings would meet the objections that are raised by the Eastern Association. I do not exactly say that we can ask the Department to pay the expenses of one delegate from every society attending, but it might be worth while to discuss the proposition of whether or not, where the expense extends over a certain amount, some assistance of that kind might be given. The single fare from our own district is $4.05 and I would rather be excused from being one of those who would ask the Minister to have the Department pay our expenses, but other societies in distant parts of the Province having no surplus of funds, and to whom the cost of sending a delegation is a serious matter, might be assisted and if we could come to some arrangement whereby, up to a certain amount, some assistance might be given we might strike a happy medium.

I am in favor of a Provincial auditor for fair books. I know you are in danger of meeting the objection that we are making too many officials. The societies and exhibitions throughout the Province are under the immediate supervision of the Department of Agriculture, and when we accomplish a system of keeping fair books that will reach something like the ideal we shall have done very much towards justifying the existence of this Association, we shall have removed a great difficulty from the way of our Association and we will make the work of the Department and of many societies very much easier and I think we will do much towards insuring a prompt return of correct return to the Provincial office. I think an auditor, who would not only revise the books but who would be able to give valuable suggestions to societies would be an expenditure well worth the cost. It would tend to uniformity of fair books, correct returns and would keep the societies posted on the latest and best features that might assist them in their work.

Now the next paragraph is one with reference to grade male stock. I am not in a position to speak with any practical kowledge of this matter. It

has been a point with my society for years that all exhibits of male stock must be pure bred. I know there is a difference of opinion with some people as to whether it is justifiable or whether one obtains the best results by resorting to grade sires. There is room for a difference of opinion in that but I think in the main it is advisable that the sires which should be encouraged by our societies should be pure bred. I do not know that I would go so far personally as to ask the Department to put a veto on offering prizes to grade male stock, but I think this Association might express an opinion on the matter which would help to educate any societies who are still carrying on this feature, help them to see the wisdom of this course, and bring them into line with the more advanced idea of encouraging only pure bred male sires.

We have, perhaps, the most practical programme we have had at any time since I have been attending these meetings, and I am sure that if we take advantage of it we shall get at what we want and what is desirable and we shall improve in our practical workings. We do not want you to be backward in making your suggestions and in "butting in" with some of the difficulties in your section. It may be a very vital matter to you and if you want light on the matter that is what this Association is for.

I may simply close by adding, without any thought of flattery, to what you have already said with regard to our superintendent. I personally know from observation and from contact and from reports something of the work he has been doing during the year, and I am glad to say that any Government who has an officer in charge of any department who is so thoroughly in earnest, and who has such a warm personal enthusiasm for the successful work of his department as the Department of Agriculture has in our superintendent, is certainly to be congratulated. We owe very much of the success of our Association to Mr. Cowan's personal efforts. I would be ashamed if I could not stand up before this Association and warmly commend his work, and I trust we will have the benefit of his assistance for many years to come. (Applause.)

Col. W. B. Saunders: I think the reading of the address and the remarks on it by the vice-president have been quite sufficient for this convention. I have no doubt in the world we are in accord with the points brought out, and there is only one remark I would like to add to it. I have much pleasure in moving the adoption of the report.

Mr. Lee: I take pleasure in seconding the motion. The motion was carried.

REPORT OF THE SUPERINTENDENT OF AGRICULTURAL SOCIETIES.

By H. B. Cowan, Parliament Buildings, Toronto.

During the past two weeks I have had the privilege of taking a trip through the states of Maine, Vermont, New Hampshire, Massachusetts, Connecticut, New York, Pennsylvania and Ohio, to investigate the work being carried on by their agricultural societies and the conditions under which these societies receive state aid. After looking into the matter as carefully as the limited time at my disposal would allow, it is a great pleasure to me to be able to report that I have come back to Canada prouder than ever of our agricultural societies and of the work we are doing in Ontario. The work we are conducting in this Province is far in advance of anything that is being

done in any of the states mentioned. None of the states have introduced the expert judge system, none of them have attempted to hold illustration or model fairs, none of them hold such conventions as we do here, with printed reports that are distributed to all the societies. In fact, we appear to be much better organized and to conduct our exhibitions more on agricultural lines.

While unable to gain many new ideas for the further improvement of our work, I was able to gather valuable information in regard to mistakes that have been made across the border, and that we may make if not on our guard.

Before describing the work being done by the agricultural societies in the states I visited, and attempting to decide whether or not they are a success educationally, it may be well for us to first decide in our own minds what is a successful agricultural society. This should not be difficult. You will, I trust, agree with me that such a society is one that was organized and is managed for the improvement of the agricultural conditions in the section where it exists. To be a true success it should be absolutely clean and free from features of a demoralizing or debasing nature.

For many years practically all our agricultural societies were conducted on purely agricultural lines. Of late years, however, a new element has been introduced by the introduction of horse racing and special attractions. Now then, let us consider the part played in our exhibitions by these features. I think that you will agree that we have a number of exhibitions that could not exist if they did not conduct a certain amount of horse racing and special attractions. You will agree, also, that so long as horse racing and special attractions are introduced for the sole purpose of drawing a crowd to see and be benefited by the agricultural features, and with the object of increasing the gate receipts, that the premiums offered in the agricultural sections may be increased, they are not, if properly conducted, to be too severely condemned. I trust that you will also agree that the minute it becomes necessary for a society to expend more money for the support of the horse races and for the payment of the special attractions than it does for the cause of agriculture, that minute the main object of that society is lost sight of and that society becomes a society managed in the interests of horse racing and special attractions with agriculture as the side line.

If you are prepared to accept these views, then you may judge to better advantage the work of the societies in the states I have visited. Some persons may say that my conclusions may be unjust to the societies, owing to the fact that my opportunity for investigation was so brief and I was able to see so few people in each state. I may state, however, that I feel the conclusions arrived at are well founded. In each state I visited I interviewed representative officials connected with the state management of the societies, and I also had the privilege of carefully reading and studying the acts under which the societies receive their state aid, as well as the official returns made yearly by the different societies.

Certain States do not give any aid to their agricultural societies. These include Vermont, New Hampshire, and Pennsylvania. This being the case, I will not refer to them, other than to say that they each have a number of societies managed by joint-stock companies, all of which are doing more or less for the benefit of agriculture.

Speaking broadly, I believe that I am safe in saying that while some societies in each of the New England states, where state aid is given, are doing good work, yet the fairs as a whole have degenerated until they are little better than horse trots and cheap vaudeville shows. This is due largely to the fact that there has been nothing in the regulations under which they have been working that would hold them to their proper lines. In case these

conclusions may seem rather sweeping, I would like to quote the opinion of Mr. G. W. Pierce, of Brattleboro, Vt., a State Senator, and president of the largest and most successful exhibition in the state of Vermont, who has made a close investigation of the work being conducted by the societies, not only in New England, but in the other States as well. This is the conclusion reached by Mr. Pierce:—

"The state of the fairs in New England shows, notwithstanding the fact that a few fairs are doing good work along educational lines and should be object lessons for the others, that the majority of them have failed in their original purpose and have been demoralizing rather than elevating to the agricultural interests in the community where they exist. Some of the reasons of the success of some of the fairs in New England seem apparent. The management of these fairs have not lost sight of these important facts that help make the fair a success and have added some new educational features each year. Pedlars, fakirs, cheap vaudeville and all low and vulgar exhibitions, which have caused the ruin of many fairs in New Englnd, have been discarded and a higher quality of entertainment introduced."

An evidence of how far horse racing has been carried in some of these states is furnished by the annual reports of the different societies. In Maine, for instance, in 1904 the total amount expended for agricultural purposes by all the societies was $21,073.84. The total amount expended for horse racing was $20,773.87. This does not include $647.75 that was expended for the encouragement of trotting bred stallions and brood mares. As the horse racing features have been introduced largely under the plea that they tend to improve the breding and trotting stallions and mares, this money might be included with the amount expended for horse racing. If this is done you will see that the societies in Maine last year expended more in this way than for all other agricultural purposes combined. These figures, you will notice, do not include sums expended by some of the societies for special attractions. While the proportion of societies in Maine that have introduced these features is small, still a considerable number of societies conduct vaudeville performances and thousands of dollars are spent in this way.

In Massachusetts the returns made by the societies are drafted in a manner that makes it impossible to find what proportion of the funds of the societies are devoted to horse racing. Practically every society in this State, however, conducts horse racing and as the premiums paid for horse races are included in the amounts that the societies have to expend before they will be entitled to a state grant, there has been practically no check on the development of this feature of the work of the societies. Many of the societies have joined horse racing circuits and arranged the dates of their exhibitions so they will fit in with the horse racing meets.

In the opinion of Mr. Frederick H. Fowler, the first clerk of the Massachusetts State Board of Agriculture, horse racing, carried to extremes, has killed more societies in Massachusetts than any other one cause. Speaking on this subject, Mr. Fowler stated that since the horse racing and vaudeville performances have increased in prominence at exhibitions the value of the societies in the state has appreciably decreased. The societies have been gradually dying out owing to the fact that the farmers have refused to continue to support them. In proof of this Mr. Fowler stated that in 1892 there were 37 societies in the state drawing state grants of $21,352. In 1905 the number of societies had decreased to 29 and the state grants to $17,400. It will thus be seen that the number of societies in the State has decreased within the past 13 years by 20 per cent.

In Connecticut conditions are even worse. The total amount paid by societies in Connecticut for agricultural purposes in 1904 was $20,-

599.69. The total expenditure for horse racing was $19,876.00 and for special attractions $10,376.29. It will thus be seen that the societies of Connecticut expended $9,652.58 more for horse racing and special attractions than for all other agricultural purposes put together, or nearly 50 per cent. more for these features than for agricultural purposes. In addition to this the side shows and gambling features conducted at many of these exhibitions have been of such a disgusting nature as to bring out a strong protest from the best elements in the state. In fact a feature of a few of these exhibitions were side shows in which women of the most depraved nature from the worst sections of such cities as New York and Boston were paraded through the country in a most disgusting manner. To such an extent was this carried that the Connecticut State Legislature at its last session deemed it advisable to pass the following Act:—

"Section 4,403 of the general statute is hereby amended to read as follows: No person shall during the holding of any agricultural fair sell, keep, offer or exhibit for sale any intoxicating liquors or keep, manage, maintain or operate any dice game, pool, shell game, table lottery or other illegal game, or keep, manage, advertise or call any obscene, immoral or indecent show, exhibition or muscular dance, or any house or tent reported to be resorted to for the purpose of prostitution or lewdness, or have in his possession any appliance or apparatus for the conducting of such games or shows, upon or within 1,000 feet of the grounds where such fair is in progress. . ."

The passing of such a bill was deemed necessary owing to the belief that every undesirable feature mentioned in the bill had been practised at one or more of the exhibitions in the state.

I do not desire it to be gathered from this statement that all the exhibitions in these states allow these features. A considerable proportion of the societies make an earnest effort to conduct their exhibitions along agricultural lines. Were it not for this fact it is probable that state aid to the societies would have been discontinued long ago. The officer of one society in Connecticut informed me that the public had now become so accustomed to expect side shows at their exhibitions that it demanded it. The result was that when his society prohibited indecent shows at their exhibition they found it necessary to engage minstrel shows of a desirable nature to take their place in amusing the crowd.

In New York and Ohio the societies on the whole appear to be doing somewhat better work. It is difficult to learn how much the societies in New York are expending for agricultural purposes, as compared with the expenditure for special attractions. In Ohio, however, where there is no restriction on horse racing, the total amount expended in 1904 for all agricultural purposes, including exhibits of manufactures, household productions, fine arts and merchandise, was $105,014.58, while the total amount expended for horse racing was $107,627.61. This shows that $2,613.03 more was spent for horse racing than for all agricultural purposes. This of course does not take into consideration the amounts expended by many of the societies for special attractions.

These figures will serve to show that if we apply the standard set at the outset for the conducting of a successful agricultural exhibition, the societies, in most of the states mentioned, can not be considered a success.

In each of the states visited some interesting information of a general nature was gathered. In Maine the state grant is distributed to the societies in proportion to the amounts they expend for agricultural purposes, not including horse racing. The Commissioner of Agriculture reports that this system is working satisfactorily. There is a clause in the Act which prevents societies from offering prizes for grade male stock.

At the three state fairs the judging of live stock has to be done according to score card, and copies of the score cards have to be furnished to the exhibitors when a request for same is made. This system of judging has given general satisfaction, and, while there has been some criticism, it has been directed more against the basis on which the points have been awarded than against the system. The cards, I understand, are likely to be revised shortly.

In Massachusetts there is a law that prevents a society from being organized within twelve miles of an existing society, and it is the general opinion that this distance is too short.

Much valuable information was gathered in New York state. The grant paid to agricultural societies in 1904 was $231.000, which was distributed among 91 societies, exclusive of the state society. This amount was raised by means of a tax of 10 per cent. on the gross receipts of the racing associations in the state exclusive of those conducted in connection with the agricultural societies. For many years the state fair granted aid only to county societies, although there were many so called township societies. Later the grant was divided, 25 per cent. being given to the township societies. This proportion, afterwards, was increased to 30 per cent. Finally, in 1901, all the societies were placed on the same basis, and the grant was distributed among them in proportion to the amount they expended for agricultural purposes, exclusive of horse racing, and special attractions. This system has given general satisfaction and has led to a great increase in the amounts expended by the societies for agricultural purposes. In this state many societies receive grants as high as $4,000. No society receives a grant for a larger sum than it expended for agricultural purposes. Although there are only 91 societies in the state of New York, and although almost all these societies are spending several thousand dollars for agricultural purposes, there is a general impression that the number of societies is too large. To prevent an increase in the number the Act under which these societies receive their government aid includes the following clause: "No other agricultural society shall be entitled to receive any moneys under the provisions of this Act until it shall have first filed annual reports in the office of the Commission of Agriculture as herein before provided, and paid in actual cash premiums for agricultural, mechanical and domestic products, at least $1,500 a year for three consecutive years, exclusive of the premiums paid for trials or tests of speed, skill or endurance of man or beast."

All the states find it necessary to adopt similar laws dealing with certain matters. They all have laws prohibiting the entry and selling of liquor on exhibition grounds, the conducting of games of chance or gambling in any form and also pool selling, while several have restrictions in regard to the conducting of side shows of an immoral nature.

In Connecticut and Ohio, although the horse racing element is so strong that attempts have been made to secure legislation that would permit pool selling at agricultural exhibitions, the attempts have been unsuccessful. These restrictions have led a number of societies in Ohio to refuse their Government grant owing to the fact that they are able to make more money by selling pools, selling privileges to fakirs, side shows, etc.

Many reasons were advanced for the change that has taken place in recent years in the work of the societies. It is contended that when agricultural societies were first formed they were almost the only agricultural organizations, but that of late years dairymen's, fruit-growers' and other organizations have come into existence, which carry on work that formerly was conducted by the agricultural societies. Another reason commonly advanced

was the great increase that has taken place in the number and size of the cities.

If I have referred at considerable length to these matters it is because I consider them of great importance. The same change that has taken place in the societies in the states is beginning to take place among the societies in Ontario. We already have societies that are expending more for horse racing and special attractions than for all agricultural purposes. Last year also an indecent show that was prohibited at the Toronto Industrial Exhibition attended a number of exhibitions in the country districts north of Toronto, where its performances were loudly proclaimed as being "for men only." A number of our societies last year also introduced these features for the first time. With the object lesson offered by the experience of the societies in the states it would appear as if we must be on our guard if we are to maintain the standard of our exhibitions. We must not lose sight of the fact that they were established for agricultural purposes and that the promotion of agriculture is their main object.

Work in Ontario in 1905.

Much excellent work was accomplished last year by the various societies throughout the Province. The weather on the whole was favorable and exhibitions generally were a decided success. Many societies improved their grounds and buildings and there was a marked increase in the demand for educational features.

Our exhibitions as a whole were more free from games of chance than for many years. The result of the work of the detectives, who made many seizures of these outfits at exhibitions during 1904, and who secured numerous convictions, was apparent last fall. Although three detectives were employed at this work they made only five seizures. In several cases the operators had set to work without the knowledge or consent of the officers of the societies. The detectives reported the exhibitions to be almost entirely free from these objectionable features.

No one feature of the work of the agricultural societies has shown greater development or is more full of promise than the increase in the demand for expert judges. Last year societies in all parts of the Province from Vankleek Hill and Alexandria in the east to Murillo in the extreme west, and from Essex County in the south to New Liskeard in the north, applied for the services of one or more judges. In all 183 societies applied for judges, being an increase of 31 over 1904. In the spring judges were sent also to eight spring stallion shows.

The great majority of the societies applied for three judges, one or two for seven, and a number for only two. These latter societies, for the most part, were located in New Ontario. There was a gratifying increase in the number of societies that applied for an extra judge for light horses. Every society of any importance should have two judges for horses. There was also an increase in the number of applications for judges of fruit, grain, vegetables, dairy products and ladies' work. The number of judges sent out in the different classes was as follows:

Horses	39	Fruit	3
Beef cattle and sheep	28	Dairy products	3
Dairy cattle and swine	27	Grain and seeds	1
Poultry	12	Flowers	1
Lady demonstrators	6	Carriages	1
Vegetables	4		

In all 125 judges were engaged, most of whom judged at several fairs. This was an increase of 35 over 1904. How great the increase in this work has been is best shown by a glance at the number of applications received from societies each year since this system was introduced. In 1901 the number was 9; in 1902, 52; in 1903, 117; in 1904, 152; in 1905, 183.

Not only has there been a great increase in the number of societies applying for judges, but societies that formerly asked for only two or three are now asking for four and five and even more. On the whole the judges did excellent work. Some complaints were received, in a few cases bitter complaints, but these all referred to the work of not more than six or seven judges, some of whom were new men. When it is borne in mind that 125 judges were engaged and that these men had to make several thousand decisions, it will be realized how satisfactory is this record.

In this connection I would like to bear testimony to the excellent work that has been done by the young men, I might almost say boys, from the Guelph Agricultural College who have gone out as judges. Several of them were so youthful in appearance that they were not employed until the regular supply of judges had become exhausted. In every case they made good and reflected credit on the excellent work being done by the live stock department at the college. In one respect these boys bring back better reports than some of our most experienced and best old judges. As a result of the training they have received they are able to explain their reasons for their decisions. This is a most important point in their favor.

A few years ago the Department paid the judges $2.50 a day and their expenses. Two years ago this was increased to $3 per day. It is evident that a still further increase will have to be made if the right class of men are to be secured. Last year some of the best judges of previous years refused to go out at that allowance. Some who did go out stated positively that they would not act again at the same salary. There are plenty of men who are willing to judge at the rate of $3 per day, but often they are not of the best class. The most successful breeders and farmers are the men needed. In the fall of the year when they are busy at home they will not look at the present allowance. It is probable the salary of the old judges at least will have to be increased. As the Department is already bearing considerably more than half the expenses of this work, it is possible that the charge to the societies may have to be advanced.

Several judges reported last fall that they had considerable difficulty with exhibitors who followed them from fair to fair. As far as possible the Department endeavors to so arrange the circuits that the same judges will not be called upon to act at neighboring fairs. This, however, is a very difficult matter to adjust. In some cases the judges place the awards on certain animals in a certain order. A day or so later the same animals may come before them again at another fair, but owing to a reversal in their form, especially if they have been driven hard, or under or over fed in the meantime, it may be no longer possible for the judges to again place them in the same order. When the judges reverse their decisions in this way it sometimes gives rise to a vigorous protest from the dissatisfied exhibitor, who announces that the judge is no good because his decisions are not consistent. This may not explain all the cases of this kind that occur, but it explains many of them. It is a point that should be taken into consideration more often than it is.

Societies will assist the Department materially if they will report promptly instances of bad judging. This will make it possible to recall a man as soon as it is found he is doing poor work. Last fall one judge did poor work at most of the fairs he visited in a large circuit, but the Department

did not hear one word of complaint until just before he reached the last fair. Had the first societies in the circuit reported their experience promptly further trouble from the work of this judge might have been prevented.

The duties of the judges are of a most trying nature. Did some of the directors of the board and exhibitors understand this fact better their work would be much more easy. The great majority of the societies apply for only three judges. Many ask for only two. These men are expected to judge all classes of live stock and to do it without a mistake. This is a well-nigh impossible task. It is an easy matter for the Department to secure men who are expert judges of either heavy or light horses. It is a most difficult undertaking, however, to obtain men who are able to do satisfactory work in both classes and yet that is what most of the societies expect the horse judges to do. The same trouble occurs in connection with the judging of long and short wool sheep, dairy cattle, hogs, fruit and vegetables, etc. Societies should either apply for more judges or be more lenient with the judges they have when the latter have to do work through two classes. I hope the time will soon come when it will be possible for most of the societies to engage experts for each of the most important sections of their exhibitions.

A matter that has never been discussed at these meetings is the advisability of having the judging done by score card. At the three principal fairs in the State of Maine, as already stated, the judges are required by State law to not only judge by score card but to give the exhibitors who ask for it copies of the points awarded their animals, and of the total possible points. This system has not been tried at the small fairs in Maine, owing principally to the difficulty of securing judges who are competent to judge in this way.

One of the features of the work last year was the conducting of two illustration fairs, one at Beachburg in Eastern Ontario and one at Simcoe in Western Ontario. These are two of the most successful agricultural exhibitions in the Province, and the Department thought it well to invite the other societies in Ontario to send delegates to these exhibitions that they might learn some of the secrets of their success.

It is the belief of the Department that the time is coming when we will have fewer and larger exhibitions. It should then be possible to arrange educational exhibits and take them from one fair to another. Owing to the fact that many of our fairs last only one day and some only an afternoon, and that their attendance is very small, it is now impossible to make such exhibits. To show the nature of the exhibits that might be prepared in this way the Department introduced a number at both of these exhibitions. A special exhibit was made by the Dominion Poultry, Fruit, Dairy and Seed Divisions, the Ontario Women's Institutes and the Ontario Agricultural College. Other features of this nature were also introduced. On the whole these exhibits proved a success and the delegates who attended appeared to be well satisfied with what they learned.

The educational value of an exhibition depends upon its prize list. When the prize list of a society encourages the production of undesirable types of animals and of inferior products of the soil, such a society may do more harm than good. Many of our societies are not paying the attention to their prize lists that they should. A considerable number of the societies still offer prizes for grade males. This is a great mistake. In the State of Maine, as previously stated, a society that offers a prize for grade male stock forfeits its right to a state grant. I believe we should have such a law in Ontario.

A large number of societies are still offering prizes for varieties of fruit, grain and vegetables that the work of the Ontario Experimental Union and of the Fruit Experiment Stations has shown, should have been discarded years ago. The directors of a society should make an earnest effort to keep

their prize lists abreast of the times. It would be a good idea for them to send a copy of their prize list to Prof. C. A. Zavitz, of Guelph, who is in charge of the work of the Ontario Experimental Union, and to the nearest Fruit Experiment Station. In this way they would learn of varieties of fruit, grain and vegetables, the production of which they should strive to encourage. The value of their society in this way would be greatly increased.

Another manner in which the prize lists can be greatly improved is by adding a few words in each section describing the strong and weak points of the different articles for which prizes are offered. If for instance a society in the northern section of the Province were to add Salzer's North Dakota, White Flint, or Compton's Early Yellow Flint corn to their prize list this year, with a line or two saying that a series of experiments extending over several years and conducted by the Experimental Union had shown these varieties to be better yielders than the old Canadian Yellow, a variety commonly grown in that section, the value of that prize list would be greatly increased. Scores of farmers who never read the reports of the Experimental Union would gain valuable information and some of them might be led to give these varieties a trial. In this way the societies would be of direct value to the farmers in their sections and would be carrying on the work for which they were originally intended.

To further illustrate what may be done in this direction, I would like to read the following paragraph that is found in the prize lists of several societies in the Ottawa Valley, under the heading of poultry:

> The prices paid on the poultry markets, especially by the English buyers, are so high that it pays handsomely to produce the type of fowl in demand. The chicken desired is one as broad and plump-breasted as possible, with short, medium-sized legs and small heads. The live weight of the chicken must be under five pounds.
>
> Directions for Fattening.—The best breeds for fattening are the White Wyandotte and the Barred Plymouth Rock. Chickens of these breeds should be placed in the fattening crates when they weigh three pounds. The fattening crates can be cheaply constructed by removing the floor from boxes about 16 inches wide and 20 inches high, and by nailing a slat floor on the box. These slats should be put on lengthways of the box 1¼ inches apart. The front of the box should be of slats nailed on up and down two inches apart. The chickens can be placed in the box by having a loose board on the top of the box.
>
> The best food for fattening is a thin porridge of finely ground grain, preferably oats, barley or buckwheat, and sour skim milk. The chickens should be fed a limited amount of food three times a day the first week, after which period they may receive all the mush they will eat twice a day. They should be in the fattening crates about three weeks. During the last ten days of the fattening, tallow should be added to each mash in the proportion of one pound of tallow to fifty chickens. The chickens should receive grit twice a week in their troughs, and also water every day. The fattening crates should be placed in stands sixteen inches from the ground.

A list of prizes offered for this kind of chicken follows.

There is a grand opportunity for our Agricultural College and Experiment Stations and for agricultural societies to come into closer touch with each other that they may, through the prize lists of the societies, encourage the production of the best and most profitable agricultural products. They will both be to blame if they continue to ignore this avenue of valuable work.

A number of societies continue to offer prizes for the best herd of grade cattle. This frequently brings animals of the beef and dairy type into competition and places the judges in a most trying position. It is an equally bad policy to offer prizes for the best pen of black or white pigs, or for the best flock of grade sheep. Prizes of this nature should be struck out of all prize lists.

From the reports received from the expert judges it is evident that numerous exhibitions last year were not the success they might have been,

simply because the directors had neglected to pay proper attention to the little things. It is the little things often that make or mar the success of an exhibition. In some cases the directors were not on hand to look after their work, the judges' books were not ready, and other matters of a similar nature had not been attended to.

It would pay the officers of many societies to hold a special meeting a few days before their exhibition. Everything connected with the management of the exhibition should be gone over at this meeting. Any little thing that has not been attended to should be noted and someone should be deputed to see that it is not overlooked. Nothing should be left to receive hap-hazard attention the day of the fair.

At this meeting each director should make it known whether or not he will be in attendance at the exhibition. Substitutes should be provided when necessary. Certain duties should be assigned to every director and he should

The educational poultry exhibit at the Beachburg Illustration Fair arranged by the Dominion Poultry Division at the request of the Ontario Department of Agriculture. A similar exhibit was made at the Simcoe Fair. It is believed that when Fairs are larger and last longer exhibits of this nature may be prepared and taken from exhibition to exhibition at slight expense. This was one of the best features at the illustration fairs.

be made to understand that he will be held responsible for their proper performance. Not only should each officer and employee know what his own duties are, but he should know those of each person connected with the exhibition. Exhibitions lasting two days and over should have a paid superintendent. This official should look after most of the petty details that too often are left to the overworked secretary. He should be held responsible for the general management of the exhibition.

On the day of the exhibition the president should have absolutely nothing to do but look after the proper running of the exhibition. If he is wise he will refrain from making exhibits while he occupies the presidency. The president should not do that which may tend to impair his power to deal with any matter that may be referred to him for his decision. He should see when the exhibition opens that every director is in his place. When a director is

absent some man should be authorized to look after his duties. The president ought also to see that the superintendent, where one is engaged, is performing his work properly, and that none of the little details are likely to be overlooked. Once satisfied that everything is running smoothly, the president should assume the responsibility of host. It is he who is expected to see that the guests of the exhibition are given proper attention, that they will be sure to go away sounding the praises of the exhibition and of its management. At all times the president should be where he may be found readily. This is necessary, if a hundred and one big and little things that are constantly referred to him for settlement may be attended to without loss of time. When an exhibition does not run as smoothly as it should about one-half the responsibility may be placed on the shoulders of the president. He by virtue of his office is the executive head and while some of the blame may rest with certain of the directors, it is his duty to see that they are doing theirs.

The secretary, that most important official of all work, ought not to have anything to attend to other than his duties as secretary. Throughout the

Spring Horse Fair, held at Berlin, 1906. Note the benefit of having a good ring.

exhibition he should be in or close to his office, that the needs of the judges and various exhibitors may receive proper attention. The best secretaries are those who know how to make their directors do their full share of the work. The employment during the exhibition of a couple of boys as messengers does not cost much, and often pays handsomely. Their headquarters should be at the secretary's office.

The directors ought to be on hand early and remain until the close of the exhibition. They should be in charge of some one department of the fair and should see that their division at least is given proper attention. Some directors complain that their exhibitions are run by cliques of three or four directors. Where this is the case it is because they themselves have neglected to assume the full responsibility of their office as director. It is a capital plan for the directors to arrange to have dinner together, as many as possible,

with the judges and leading guests on the day or days of the exhibition. In this way they hear of little things that are being neglected, of exhibitors who are dissatisfied, and of suggestions for improvement, and it is often possible to attend to these matters in time to prevent future trouble. The directors of a majority of the most successful exhibitions in the Province have followed this plan for years, with excellent results.

A proper conception by the officers of a society, of their duties will go far to make a success of an exhibition that otherwise might be a failure. It is because a considerable number of our societies are conducted in a slip-shod manner that attention is drawn here to this matter.

Judging Rings Needed.

If there is any one matter that should be attended to more promptly than another, it is the judging rings. Lack of proper judging rings is one of the worst features of many of our exhibitions. An exhibition that is without suitable facilities for judging, particularly in the horse and cattle sections, cannot be considered a complete success. Where strong rings are not pro-

The first thing a society should construct on its fair grounds is suitable judging rings. Cheap ones are better than none. Here is one, on the Palmerston grounds, made of posts with a rope strung through them that serves to keep the crowd back.

vided and where the crowd is not made to remain outside it is impossible for the judges to do satisfactory work. The exhibitors become dissatisfied and the spectators disgusted over their inability to see what is taking place. The danger also is increased.

When it is borne in mind that judging rings can be obtained at but slight expense it is astonishing that so many societies are negligent in this respect. The best judging rings are those made of posts set closely together and sunk firmly in the ground with two or three boards nailed to them as crosspieces. Where such a fence as this is too expensive a cheaper one can be constructed of wire. Some societies have made rings that answered the purpose by stringing a strong rope through holes in posts, sunk in the ground. After the exhibition they are able to pull up the posts and store them and the rope for use another year. It does not matter so much how the rings are constructed as it does that every society should have rings of some sort. Construct these rings even before you erect buildings or make a track. They will add greatly to the educational value of your exhibition.

Societies that have good judging rings would do well to surround them with a seat or seats. These may be made of ordinary planks and the expense need not be great. The people who attend an exhibition soon become tired and are anxious to find a place to sit. Many do not care to pay to get into the grandstand. The most successful business man is the one who caters to the comfort and convenience of his customers. The same principle holds true in the conduct of exhibitions. At the Beachburg illustration fair last fall a strong seat was built all around a large horse ring, at an expense of about $40. All afternoon that seat was occupied by several hundred people, principally ladies and old men. On no feature of the exhibition were the directors more warmly commended than on this. Try it at your fair.

Apply the rule of promptness in stock show rings and provide for the comfort of visitors, and you divide the crowd with the grandstand. The main thing needed at most exhibitions is not larger exhibits, but schedule time in

The cattle ring of the South Renfrew Society. Note the value of the ring in keeping back the crowd and giving the judge a good chance to compare the animals. These rings are appreciated by the spectators, the exhibitors and the judge. Every society should have judging rings of some kind. It is a great improvement when a ring like the one here shown has a seat placed around it. The seat does not cost much and is enjoyed by the spectators. A description of the building will be found under another illustration.

judging. Have a suitable place for awarding prizes, insist that every judge shall be prompt in commencing and carrying forward the work, require the utmost publicity in awarding the prizes and the contests will be as attractive as the races. Too much of this is slipshod work, done at the convenience of the officials or judge, and in a manner to bewilder and disgust the onlooker, who leans on the fence and sees little and knows less of what is going on. We admit that agricultural fairs must be educators. For this to be possible more systematic work and greater publicity is demanded in the show ring.

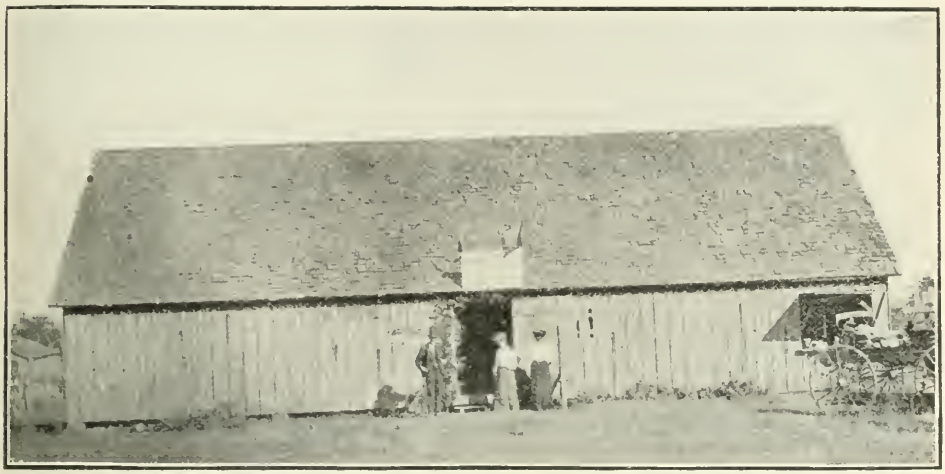
Use Megaphones.

The people at an exhibition like to know what is going on. Let them. It will pay societies that have not already done so to purchase several megaphones for use on the days of the exhibition. One of these should be kept in the horse ring and the others where needed. With a megaphone it is possible to make announcements, call out exhibits and announce awards so plainly that they can be heard all over the grounds. In this way the work of the judges can be greatly expedited and the spectators can be kept posted in

regard to the principal prize-winners, and the leading features of the fair. Megaphones can be bought for from 25 cents up to two or three dollars. They last a long time. One, at least, should be owned by every society.

Dining Accommodations.

Has your society made arrangements by which it is possible for the people who attend your fair to obtain their dinner on the grounds? This dinner should be a good one and it should not be thrown at the people just because it is "exhibition time." If the hotel accommodation is not sufficient, and it seldom is, your directors will do well to make other arrangements. Some societies charge for the privilege of furnishing meals on the grounds. An excellent plan is to arrange with the ladies of the W.C.T.U. or with the



Societies that have them find dining halls a great convenience for the public. The building here shown is used as a dining hall by the Otterville Society. It was built in 1873, is 56x28 ft., cost $230, but one like it would cost about $600 now. The kitchen is built on behind.

ladies in some of the churches to take charge of this work. In some cases arrangements can be made to have part of the profit revert to the society. Where a suitable building cannot be secured for this purpose often tents can be used to excellent advantage. Do not overlook this feature next year.

Printer's Ink.

Use plenty of printer's ink. Have signs up everywhere. These should show the way to the secretary's office, draw attention to the principal features of the exhibition and the educational value of the various exhibits. Every variety of fruit, grain, vegetable, etc., should bear a card giving its name and such information as is possible concerning its value and suitability for use in the section where the exhibition is held. Were this done the educational value of our exhibitions would be increased 100 per cent. The directors of most exhibitions admit that more information of this nature should be given, but complain that it costs too much to have the cards printed and that they have not time to bother with the matter. In regard to the latter contention, all that can be said is that they should either make time or turn the work over to some person who will attend to it properly. The printing of the

cards is a more difficult matter. Societies that are in earnest in their desire to strengthen this feature of the fair would do well to buy a metal stencil of

Part of the Fruit exhibit of the South Renfrew Society. Note how the educational value of the exhibit is increased by having cards naming and describing the varities of fruit.

all the letters of the alphabet. Stencils of all sizes of letters from half an inch to 10 inches in length may be purchased at an expense not exceeding

An exhibit of desirable and undesirable sides of bacon made at the Beachburg Illustration Fair by the Ontario Department of Agriculture. Live animals, also, were shown to further illustrate the points brought out by the exhibit of the cured sides. The cards were printed by stencils that may be bought at a cost not exceeding $10.00.

$10. With them it is possible to print large signs, at least, without much loss of time. These signs may be painted either on cardboard or on boards. Owing to the fact that the work is rather slow it is not practical to undertake

to print numerous small signs in this way. For the small signs, a box containing the letters of the alphabet in rubber, with an ink pad, may be purchased for a couple of dollars. With this little outfit scores of small signs can be printed at but slight expense and without much loss of time. At the Ontario Horticultural Exhibition last fall I had scores of small cards printed on my typewriter. These were attached to the various exhibits. In this way sightseers were able to learn the names at least of the various varieties of fruit and flowers. In many cases considerable additional information was given.

If a sufficient number of societies will take up the matter the Department will be glad to arrange to have a number of signs like the sample printed below furnished to the societies at cost price. It is the first cost of setting up the type that is responsible for the heavy expense of printing these cards. Once the type is set it is as easy to print 1,000 cards as 50, except for the cost of the extra labor and material used, which is usually trifling. The Department could readily have signs printed describing the strong and weak points of the different varieties of fowl, fruit, grain, etc., and would be glad to do so were it to receive assurance that a sufficient number of societies would like to get these signs and that they would use them to advantage once they had them. They can be furnished in lots of from ten to twenty-five for thirty-five cents a hundred. For a couple of dollars societies could secure enough cards to use the most of their exhibits. More signs of this nature, many more, are needed at our exhibitions. Let 1906 show an improvement in this respect.

Sample card that can be furnished societies at the rate of 35 cents per hundred:—

Plymouth Rocks

The Plymouth Rocks are by all odds the most popular chicken on the continent to-day. They are average layers of medium sized brown eggs. They are good mothers and sitters and would be classed as a winter laying breed and lay brown eggs averaging about eight to the pound. They are hardy, fair foragers and an all-round general purpose chicken. They are among the best chickens which we have for fattening purposes.

Fairs Insurance.

The matter of securing a system of fairs insurance against rainy weather has received considerable attention since your last meeting. Further investigation has revealed some serious difficulties, although I still believe that it will be possible to do something in this direction. Two of the chief difficulties are the following: A society may lose money in part, owing to rain on

the day of its exhibition, but in the main, because the directors neglected to advertise and work up the fair the way they should have done the total loss would, however, be blamed on the rainy day. The second difficulty is that some societies might lose heavily through threatening weather, although it might not rain at all. The matter is of such importance, however, that I do not think it should be allowed to drop. In the event of the basis of the distribution of the Government grant being so changed that societies will receive their grants in proportion to the amount they expend for agricultural purposes, it may become advisable and necessary for the Department to appoint an official whose duty it will be to audit the books of the nearly 500 agricultural and horticultural societies in the Province. Such an official would be able to check the books of societies that suffers loss through rainy weather at their exhibitions and this would be a protection against the lodgement of excessive claims for assistance. With a further extension of the expert judge system the time will come when expert judges will attend practically every fair. In this way the Department will be able to receive through the judges an impartial statement as to the probable loss sustained in cases of rainy weather. In this way some of the worst difficulties will be solved. The matter is too important to be allowed to drop.

Municipal Grants.

Is your society receiving a grant from your county council? If it is not it should be. Most of the county councils in the Province give grants to their local societies. It is probable that if proper pressure was brought to

Competitors in the sports on horse-back at the Simcoe Fair.

bear you might be able to obtain a grant. A year ago last summer the Department issued a statement showing the annual grants made by the different councils to their local societies. One county at least gives its district society an annual grant of $500. A copy of this statement may be had on request. Arm yourself with one and get busy with your council. Grants made by county councils, like the Government grant, should be distributed among the societies in proportion to the amount they expend for agricultural purposes. Once the Government adopts this principle it will be an easy matter for the county councils to do likewise.

Direct the Crowds.

A crowd of people is much like a flock of sheep. It rushes here and there wherever a few people lead. This tendency is responsible for many of the accidents that occur at exhibitions. One of the most difficult times at which to control the crowd is when it is rushing to leave the grounds at the close of the exhibition. At many fairs the people have to cross the track to get out, and it is here the accidents take place. The Simcoe County Fair has adopted an excellent plan for directing the crowds. Wooden benches are kept near the gate until the crowd starts to leave, when they are immediately placed across the track. In this way the horse traffic is stopped until the crowd has passed safely out of the grounds, through the passage made across the track by the two rows of benches. This plan was tried last year at the Beachburg fair, also with excellent results. It is worth general adoption.

Get Out the Crowds.

Where societies hold their exhibitions in or adjoining a large town or a city it might pay them to send a small procession, headed by the band, through the city shortly before the exhibition opens each day. Several societies do this to their financial advantage. It tends to stir up the enthusiasm and to let everybody know that "Fair Day" has arrived. There are many other matters of this nature which I would like to take up, but I feel that time and your patience will not permit.

In conclusion, may I congratulate you as the representatives of the agricultural societies of the Province on the excellent work your societies as a whole are doing. Your success has been due to the fact that you have kept the cause of agriculture before you. As long as you continue to do this so long will our societies continue to be not only a success, but a credit and a benefit to the Province.

Auditing of Fair Books.

A Member: Are you in favor of the appointment of an auditor of fair books?

Mr. Cowan: Yes. If you take a body of five hundred men, like the secretaries of the agricultural and horticultural societies, it is a strange thing if you do not find fifty or a hundred below the rest. These men give the Department a great deal of trouble with their reports. In some societies crude work is done; their reports are not received for months and in some cases their accounts have to be investigated. This is why you do not get your Government grants as early as you should. If we had an auditor, it would not be necessary for him to examine the books of good societies, but he would go after those that are always behind.

A Member: And he could prepare a uniform system of bookkeeping?

Mr. Cowan: That is what it would lead to.

The Chairman: I am sure we have been very much interested in Mr. Cowan's comprehensive report. It contains a great deal of matter for our consideration. It is now open for discussion.

Horse Racing at Fairs.

A Member: If I understand it right, you sent out notices to the fairs last fall, forbidding them to have horse racing at the fairs, is that correct?

Mr. Cowan: I have had lots of fun over that notice. It did not forbid horse racing, but pointed out that horse racing was against the law and it was sent out a year ago last fall.

A Member: And last fall too?

Mr. Cowan: No, not last fall; you did not receive any notice last fall from the Department relating to horse racing.

A Member: Has the Government ever withdrawn the grant from societies that allowed horse racing?

Mr. Cowan: The Government has not got the power to withdraw the grant.

A Member: Why was the notice sent out?

Mr. Cowan: No notice was sent out that the grant would be stopped if horse racing was held. The Act reads that where a society holds horse racing action can be taken against the directors. It does not say the Department will do it. Any person in the vicinity can do it.

A Member; And the Government grant will be withdrawn?

Mr. Cowan: No, the Government grant cannot be withheld for that.

A Member: Has there been any person appointed by the Government to attend these fairs in order to see whether horse racing is carried on or not?

Mr. Cowan: No.

A Member: Statements to that effect have gone broadcast?

Mr. Cowan: No one has ever been sent out by the Government to see whether horse racing is conducted at exhibitions.

A Member: Do we then as members here understand this, that any society that wishes horse racing to take place is debarred in any sense from receiving the money given to them from the Government?

Mr. Cowan: No.

A Member: That is an interpretation that I never received before. A vast majority of the people of this Province have been misled on that point.

Mr. Cowan: The Act has been there for any person to see if they wanted to. I have sent out copies of it by the score.

A Member: Items have gone out from the daily press. The secretary has the Act, and he ought to know some of the rules; but the daily press, particularly last fall, published items saying that the Department was going to take some action in regard to stopping horse racing at the fairs.

Mr. Cowan: If any statement of that kind was made by the papers they had no authority for it. Generally the newspapers men give fair reports, but they sometimes get things badly balled up. For instance, they were responsible for the statement that we were going to have sewing machines running at the fairs instead of ensilage cutters. (Laughter.)

A Member: As one of the directors of the Dufferin Central Fair, I may state that a document was laid before the directors last fall, setting forth the statement made here to-day. I am not in a position to say from whom it emanated, but the statement was laid before the board of directors, and for that reason they had nothing in the shape of horse racing at the fair.

Mr. Cowan: The Hon. Mr. Dryden introduced that clause in the Act, so as to prevent horse racing. A clause, allowing speeding in the ring, was inserted, and after that societies conducted horse races and called them trials of speed. A year ago last summer Mr. Dryden called me into his room and showed me a number of protests that he had received against horse racing being carried to extremes, and he said something must be done. He then prepared the statement which I sent out, and this is the statement referred to here to-day. That statement simply quoted this Act, and went on to give a definition of trials of speed as compared with horse racing. The

statement was not sent out last fall. The difference is that a trial of speed is where the fastest horse does not necessarily win, and where the decision rests on the value of the animal as well as on its speed. A copy of the Act and of this definition of a trial of speed was sent to every society in the Province, and if they did not understand the Act it is because they did not read it carefully.

A Member: Was there not something more put in that notice, saying that the law would now take its course?

Mr. Cowan: No; I will bring a copy of it down here. Later Mr. Cowan read the notice referred to which was as follows:

Toronto, Aug. 29, 1904

Dear Sir,—The Department of Agriculture, having been formally notified that certain Agricultural Societies in the Province are in the habit of conducting horse races for purses of considerable value, at their fall exhibitions, the attention of Boards of Directors of Agricultural Societies, is called to Section 29 in the Agriculture and Arts Act, which forbids such practise and reads as follows:

29.—(1) "It shall not be lawful to carry on any horse racing, other than trials of speed under the control and regulation of the officers of the society, during the days appointed for holding any exhibition, by any district or township society, at the place of holding the exhibition, or within five miles thereof."

(2) "Any person who is guilty of a violation of this section shall be liable, upon summary conviction before a Judge of the Peace, to a fine not exceeding $50, or imprisonment in the common gaol of a county for a period not exceeding thirty days."

In Subsection 1 of Section 29 it reads:—"Other than trials of speed, under the control and regulation of the officers of the society during the days appointed for holding any exhibition, by any district or township society." This is interpreted by the Minister to refer to the usual process in judging double or single carriage or saddle horses of allowing them to travel around the ring for the purpose of showing their style of action and speed, so that the judges may be able to determine the best horse for the purpose as shown.

Sincerely yours,
H. B. Cowan,
Supt. Agricultural Societies.

Several members on hearing the circular read admitted that it was the one they had in mind, and that they had misunderstood it.

General Discussion.

Dr. Simmons: I think on the question of horse racing there may be a little contradistinction, and the question has come to me as secretary of one of the societies, that there is no compunction raised as to racing, from the fact that our superintendent has been over the Province and looked into the societies in nearly every section and they have not lost their ground. Regarding sending our prize list to Mr. Zavitz, that would not do, because not one prize list would suit for every district of this Province. A prize list that would be suitable for the eastern part of the Province would not be suitable for the west. It would not do to give prizes for beef cattle in a dairy district. In some exhibitions you will have only five or six head of cattle in the Jersey class, and in the Durham class you will have a big exhibit. Our friend the superintendent organized us in the Bay of Quinte District into a District Association, and with him we appoint our own days for the fairs, and we are looking for him this winter again. I think other societies in the district should come together and make up a prize list, and I do not think it should be sent to Mr. Zavitz or any individual in this Province. You cannot get one prize list that would be suitable to the entire Province, because our interests are entirely different. The judges told me

we had a fair that was second to none in the Province. Our fair is at Frankford, Hastings County. We give special prizes to the man who grows the most and best varieties of fruit on his place, and the man who grows the best table vegetables get a special prize, and we had just as good an exhibit as they had at the Industrial at Toronto or the World's Fair, St. Louis.

Mr. Cowan: It is evident that my remarks have not been understood. In suggesting that the prize lists should be sent to Prof. Zavitz, I had in mind that he has 4,000 experimenters in all parts of the Province, and if a person sends a prize list from any section to Prof. Zavitz he is not going to give the results of Essex County to that man unless he comes from Essex County. If he comes from Hastings County he will give the results gained by the 20 to 40 experimenters located in that county. I realize as well as anybody that it is absolutely useless to try and draw up any prize list for the whole Province.

As regards local associations, I want to have something thoroughly understood right here and now, and that is that county associations cannot set dates, and force the Department to send the fairs judges on those dates. We are only too glad to have societies meet and prepare a statement of dates, and try and get them arranged as well as they can and then submit them to us, and we will adopt them if we possibly can. It is often the case that there are a number of societies in the section that do not join the local association, and they may want judges, and the Department, therefore, reserves the right to pass upon any circuit that may be prepared; especially as it has to pay the judges.

Coming back to the question of horse racing, it is against the law to hold a horse race at an agricultural exhibition, but nearly half the societies in the Province have been holding horse races, and defy the law, simply because the local opinion in their district has not been strong enough to compel the officers to follow the law, and the Department has never felt called on to send any person around to see if societies were holding horse racing: because we knew that fact without sending anybody around. In spite of the fact that the law has not been an entire success in Canada, and in spite of the fact that half of these societies have been holding horse races, I am satisfied that the law has been of great value to the agricultural societies of Ontario, because many of them have respected it, and have not held horse races but have conducted purely agricultural exhibitions. Were it not for that law, more of our societies would have held horse races, and on the whole we would not have been doing as good work as we are. I do not want you to think I advocate that the law should be introduced again in its present form in any new Act, because I do not think it should be; but I believe that that law has had a good effect, and I believe the societies in the States have run to extremes in horse racing simply because they have had nothing to hold them back. We must, on that account, see that precautions are taken that will prevent the horse racing element gaining control of our exhibitions. (Applause.)

A Member: Supposing horse racing is held on the agricultural grounds the day of the exhibition, and conducted right along the lines of horse racing with a view to being a benefit to the society can the Government grant be withheld from that society?

Mr. Cowan: No.

Col. Saunders: It is claimed that the Department should have the right to fix the dates for our different township fairs. I think that is going to work out very badly. I have the honor of being president of the County of Simcoe and Georgian Bay Fairs Association. We have our meetings

annually, and this year, although not so large a meeting as in former years, there was not a clash in our district as to holding shows, and I have found that the assembling together of presidents and secretaries is a very great benefit, because they can consult and arrange matters. I am rather proud of having instituted this procedure in our district, and I think it is working very well. In the district I speak of we have ten or twelve towns, and the competition that exists between towns and villages is well known. If you can get these societies together, and get them to fix their dates so that there will be no clashing, I think it ought to be easy enough for the Department to fall in line and send their judges to these different fairs where there is a regular circuit formed. I think there ought to be encouragement given to us on that line, and I hope Mr. Cowan will see things from our point of view. I would like to make a suggestion, and that is if the report which Mr. Cowan has read is to be published I think it is only justice to those who are conducting horse racing to change the diction of his report where he says "that the introduction of horse racing and special attractions have a tendency to operate against the proper conducting of agricultural shows." I think we ought not to connect horse racing and fakers, and I would like to see the report amended in that direction, because although I am only a boy I know the older men in the room will remember that horse racing was practised at all the shows from the earliest date. We spent hours years ago trying to find out from our delegates how many were in favor of horse racing, and how many shut out the fakers, and those who had properly conducted trials of speed were very much in the majority, and I assume they are in the majority in this convention, and I do not think that they should be classed with the fakers, the tin men and the monkey shows that come to our shows every year. (Applause.)

Mr. Scott: Mr. Cowan said he did not think there ought to be a prize given for grade cattle. In our section of the country there is a great deal of interest taken in the herds of grade cattle, because we are in a dairy district and there is more interest taken in that kind of a herd then in pure bred cattle. I think if we take the prize for a herd of grade cattle out of our prize list a great deal of the interest of the show would be lost. I think prizes for grade males should be struck off at once, but I think we get the best by a cross with grade females.

Mr. Mitchell: I want to speak of a couple of features in Mr. Cowan's report, because it will be a considerable time before that report is printed, if we are to judge from past experience. We may not have it in time for the preparation of our prize lists. I want to urge some of the suggestions with reference to sending to Prof. Zavitz and to the Agricultural College for the revision of parts of the prize list. I think that suggestion is satisfactory as far as it goes. In our section we have for some years sent our fruit prize lists to the Agricultural College, and I think it has been profitable for us to do so. They have been able to advise us as to the best fruit for our section. As to the proposition that printed cards should be placed on the fruit, giving the kind and a description of the fruit, I am prepared to hold up both hands for it. It may take a few dollars each year from my printing office, but we do not mind that, and I hope the Department will carry out the plan, because I think it would be a great means of instruction to the people who examine the fruit. I think it is a very commendable improvement.

The next matter I come back to is that of keeping fair books, and I hope the Department will be able to construct an ideal book for fairs associations, that the Department will furnish these books at a nominal price,

and that some means will be arranged by which every fair can have that ideal system. I have not yet been able to see why the Department should not be able to prepare these books the same as they prepare them for the Farmers' Institute.

A MEMBER: And furnish some bookkeepers, too.

Mr. CHARLES: I want to make a few remarks with regard to Mr. Cowan's address. Somehow or other, having been a president of an exhibition for three years, I cannot help thinking that Mr. Cowan must have been consulting with me, because he has carried out in that report a great many of my own ideas, but I will say that he did not get the information straight from me. I highly approve of having a Provincial auditor, and that we should have one set of books to be used by every fair association in the Province. I also approve of what he had said with regard to the prize money being awarded for agriculture alone. I have noticed that in a great many prize lists they do not make the punishment fit the crime. In some institutions they will give as much money for a cock and hen as they will give for a horse. (Applause.) I think that is altogether wrong. They will give as much for a sheep as they will for a cow, and I think that is wrong. You should take the value of exhibits that come before you and give prizes accordingly. He is perfectly right in saying that there should be special judging rings provided for all sorts of live stock. He must have gone to Peterboro' in order to get that information, because the first thing we did was to fence in rings for that purpose; a horse ring, a cattle ring, a swine ring, and a ring for judging sheep. There was an objection to bringing the swine into the ring because they fought and we had to judge them in their pen. The judges do not get fair play, nor the people do not get fair play, if a whole crowd of people are pressing around.

Another point I would like to emphasize is that everything should be done on schedule time. The first two years I had programmes printed stating every hour and the events that were to take place at that time, and last year I adopted the plan of getting about two thousand programmes printed stating the events that were to take place at a certain time. They were distributed all over, and from the beginning to the end the judging went on to the minute, and when the last class came into the ring it was exactly the hour mentioned on the programme.

I would like to see this horse racing business put upon a proper footing. We want to be straight in this matter. We do not want to have horse racing called speeding in the ring because it is not speeding in the ring by any manner of means. It is straight horse racing. (Cries of No! No!) We have heard it stated that horse racing is illegal, and that the Government knows that horse racing is going on, and we should not be put in the position that we are doing illegal acts. It says horse racing and all other immoral shows. I say it is not immoral. I have yet to go to any exhibition where I see betting on horse races except in Toronto, and it should not be allowed at all, and I believe the prizes for horse racing at exhibitions should not be very large.

If we bring a lot of stock to a place the farmers will go there and see it, but they have a perfect right to have some amusement as well. You should have amusement for the people as well as education. The first year I was connected with our fair they had no amusement at all and the people were not satisfied. They said that they could see that kind of stock any place, and that they wanted to see something else. It is a good thing for a man to bring his family to a fair and for them to be amused. I thoroughly approve of Mr. Cowan's report from beginning to end, and hope it will be carried into effect right through all the associations in Ontario.

Mr. W. H. Kerr, Brussels, East Huron: I approve of uniform books being prepared, but I must say I do not approve of the appointment of an auditor to visit fair societies. In almost every municipality we have men who are engaged to do all the auditing in connection with agricultural societies. I do not think it would be right to saddle on the Province another auditor. If there are societies who are not up to the mark, then I think they should be brought to book. I am not an advocate of horse racing, yet I am of the opinion that there is nothing wrong in showing the speed of a horse any more than there is in showing the hair on a horse's leg that is raised for hair. Farmers and others interested in horses want to see an exhibition of speed in connection with them.

I did not understand that circular that was sent out. I understood that if we allowed speeding in the ring to be conducted, we were in danger of having our grant removed from us altogether, and I know of societies that cut out that branch of the programme to the great dissatisfaction of the people. Of course I know there are a great many things presented to Mr. Cowan and to the Department that are very hard to govern. I think we ought to condemn all these things that are wrong and try to run the fairs along proper lines. I do not think the people will come to see any old cabbage. We have tried to develop our fair along agricultural lines, and at the same time afford the people a little amusement. I am sure the address given by Mr. Cowan has been full of suggestions and will send us home with ideas that will be helpful in connection with our various institutions.

Mr. Charles: With regard to giving prizes for grade males, I think that should not be allowed, and I think the Government should simply prohibit it entirely. I think that no horse should be allowed to go over this country unless he is licensed, and has a certificate, and I say that the stock of this country will never be improved unless something of that kind is done.

The Chairman: I am sure the address has been very interesting and our thanks are due to Mr. Cowan for his efforts in our behalf.

Mr. Cowan: I would like to reply to some of the points made in some of the addresses. It looks as if I am going to be kept busy explaining myself. Mr. Sheppard referred to a county association setting dates. The trouble is that most of these associations want to keep the dates of their exhibitions pretty far apart, and they set two fairs a week for about three weeks. You can easily understand what it would mean to the Department if we had to put judges out in that way. Some directors simply think of their own fairs and do not think of the judges, or the other fairs a few miles away, and unless the societies arrange their dates properly we have got to lose money. The Department is quite willing, wherever possible, to accept dates that are arranged in circuits. So far we have had very little trouble. As to grade herds, I do not suggest doing away with prizes for grade herds. What I do advise is not to offer prizes for beef and dairy herds mixed, but to offer prizes for the best grade herd of dairy cattle, or for the best grade herd of beef cattle, but do not lump the two together. With regard to printing the annual report, I may say that we have had a lot of trouble in getting the annual report out in time, and one trouble has been because the Association holds its session during the meeting of the Legislative Assembly, and all Government printing has to give way, at that time, to the Legislature.

A Member: Why could not that report of Mr. Cowan's be printed before this Association meets at all and then be incorporated in the general report?

Mr. Cowan: I can have a copy made in my office and sent to every society in the Province.

A Member: Would it not answer the same purpose for a local auditor to audit the books, and then report to the Department?

Mr. Cowan: No, because that is what is done now. Don't think for a moment that we want to do away with the local auditors. We do not. There will be scores of societies that the Provincial auditor need not go near. A lot of the local auditors don't amount to very much.

Mr. Alexander McDonald: I quite agree with you that you could not get along without a Government auditor in case a change is made in the Government grant so that societies will get their grants in proportion to what they expend for agricultural purposes.

A Member: The auditor would have to have a salary, and that would take something off our grant.

Mr. Alexander, Burk's Falls: It seems to me that if we are to get our grant according to the amount we expend for agriculture, unless we have a Government auditor we will not know whether or not we are being fairly dealt with. I know a society within sixteen miles of Burk's Falls, and I do not know how they can audit their books, because they never get a receipt for prizes, and the membership tickets are sent out without any accounting. How can they give us a return for what they have spent for agricultural purposes? And it seems to me that the Provincial auditor would go and look these matters up, and he would be our guarantee that everything was all right.

A Member: Should not the local auditor do that?

Mr. Alexander: No, because some of them are no good. We have a local auditor, and we have to account for every ticket. The auditor won't pass in accounts unless I can show a voucher for every item.

Mr. Barlow Cumberland, Port Hope: I think the suggestions for the appointment of a Government auditor is one directed towards the improvement of agricultural societies, and it is made, I am sure, not for the purpose of spying into our accounts, but to help us improve our accounts. No agricultural society can succeed unless it knows how it is getting on, and unless they keep their books right. Another thing is that there will be a uniformity of accounts, and the important work of obtaining statistics will be helped by the same method of bookkeeping. These statistics will be more accurate, and I will therefore hold up both hands for a travelling auditor. I am sure we must be very much obliged to Mr. Cowan for his excellent address. It is astonishing to notice that eternal subject of horse racing coming up; I thought we had got to the end of it. Take the agricultural fairs to-day and compare them with what they were thirty years ago, and take agricultural exhibits, as presented in the exhibitions to-day, and the horse racing that they had almost entirely in the olden days. In those days it was horse racing and agriculture and now it is agriculture and horse racing. The majority of our people come to fairs to learn something about improvements in agriculture and the improvements in stock. Others go for the purpose of seeing attractions. Every locality has some young fellow who has a fast horse, and he wants to try that horse against some other horse; but that is a very different thing from these light buggies and expanded wheels and horses that are all tied up together so that they cannot fly apart. That is the class of horses that is taken round the circuits, and that is not the kind of horse racing or speeding that we want at our agricultural fairs. One important point brought out by Mr. Cowan was the specializing of our prize lists. There is no part of this province exactly the same as another. Some parts grow better things of one kind than they can of another, and I think we should select classes that are best adapted to the neighborhood in which

the exhibition is held and if we are in a dairy district we should give a larger prize for dairy cattle than we do for beef cattle. We must thank Mr. Cowan for his report.

R. J. Sproule, Flesherton: I have been secretary of the East Grey Agricultural Association for a number of years, and I have found that there are a great variety of ways of keeping accounts. I agree with my friend who said we have no guarantee that the accounts are kept properly, and that the returns to the Government are made as they should be. I think we should have a uniform style of books and book-keeping, so that all accounts will be kept in exactly the same way, and then a provincial auditor can come in and go over the books without any trouble. I also agree with the statement that there are a great number of cases where a provincial auditor might not be required, and there are a number of cases where it might be useful to have him. We used to make a distribution of the county grant on the same principle as the distribution of the legislative grant, three fifths to the district and the remainder to the township societies. I was instructed a couple of years ago that the distribution of the grant was to be made according to the number of members returned, and I wrote about it, and I got a reply that the distribution was to be made according to the number of members.

Moved by Mr. Murphy, seconded by Mr. Hoar, that Mr. Cowan's address be adopted, and that he be tendered a vote of thanks by this Association for the great energy he has displayed and the services he has rendered to the societies in preparing the report. Carried.

ADDRESS.

By Hon. Nelson Monteith, Minister of Agriculture, Toronto.

The pleasant duty devolves upon me of presiding, to-night, over this meeting of what we look upon as one of the most important branches of the Agricultural Department, namely, the Agricultural Societies of the Province. We have reason to be proud of that branch. Although I cannot claim to be the father of the Department, yet I am looked upon to a certain extent, as the director of the different branches connected with that Department, and possibly, my connection with the branch you represent has been of longer standing than that of almost any other. Out of some twenty distinct headings, under which we divide the work of the Department of Agriculture this takes from the provincial treasury the largest amount of money. Since taking over the Department I have been questioning, as many of you probably have been, as to whether or not the money expended on this great work is spent to the best advantage. I am glad to know that you, coming as you do from all parts of the Province, are here to discuss this matter from your different points of view.

We are here to-night to have somewhat of a "heart to heart talk" on the ways and means by which this work can be bettered that it may bring greater results for the uplifting of agriculture in this Province. Our agricultural societies are not a thing of yesterday nor of to-day. We find, on looking over the records, that as far back as the beginning of government in this Province men have been looking around for means by which the calling of agriculture might be advanced, and we find that almost identically with the organization of government in this province, over at old Niagara, an organization was instituted to help on agriculture. Meetings were held monthly, and the next year an agricultural show was attempted. That was in 1793. You see that from a very small beginning you have radiated, until

the whole province is virtually covered with agricultural fairs, and the question has arisen as to whether or not we have over developed in the number of our shows.

A few things have impressed themselves upon me during the past autumn. One of them is that, in the first place, what is required among agriculturists is that feeling of pride in their calling emphasized by their actions. You represent the largest of all callings in this country, in the production of wealth, and when we go back in the history of agricultural movements we find that it was the same in the days gone by. Men are taking a greater pride in their work. The public men in this country in the earlier movements of agricultural societies allied themselves closely with these organizations, and made them somewhat of a social feature. From year to year the public men of our Province came together at these meetings, and although there were only a few of them at that time, yet they discussed the progress and the agricultural events of the year, and in this way the agricultural advancement of the country was made popular, and that is something that is lost sight of to-day. We require to have the public attention fixed on these different methods for our advancement, and it is largely by means such as I have spoken of, that this public attention is drawn to the work in hand. A great work is being done by our agricultural fairs, but, apparently, a great mass of the people are losing sight of the main object of these gatherings, and that is the educational feature. That should not be lost sight of. Men go to agricultural fairs as a matter of course, in fact very much as a matter of habit, not so much to see the improvement in the live stock exhibited this year over that shown last year, which should be one of the main features and the same is true of the other parts of the exhibition; but they come more because they are in the habit of coming. These are some of the ideas that struck me.

I was very much pleased while attending a show in the Rainy River District, at a small place called Emo, to see there the virility of the people, as expressed by their show. The people from far and near came out to that show. They had no regular pavilion, just a shed made of rough boards, and each exhibitor displayed his best products of the field. It was refreshing to see the deep interest every exhibitor took, not only in his own products, but in those of his neighbor. This feature of the shown is being lost sight of in older Ontario. It seems to me that the time is now opportune for some other step to be taken, and I believe by the re-organization of the Agriculture and Arts Act great good can be brought out of our fairs in years to come. This is the desire of the Department, and it will be the object of the Legislature to make our agricultural shows more valuable educationally, to try to draw the public attention to the exhibits, to point out through the medium of expert judges, ideals that should be set up in every line, and, as far as possible, make of the agricultural society work what it is meant to be, one of the most valuable educational links in the great agricultural education carried on in this Province.

Now I would be unkind were I to speak at any greater length. I am here to speak to you as a representative of the Government; but do not imagine that when it is stated that the Government expends $90,000 per year on this work we think that it is the Government money that is being spent. It is your money, and we are simply your trustees. (Applause.) It is our desire as your trustees to see that this money goes to the object for which it is voted by the people's representatives. I ask you, as one who has the disposition of this money, to see that this money goes for the object for which it is voted, and that it is placed where it will do the greatest

amount of good for the people and for the betterment of the agricultural products of this country. (Applause.)

Col. McGillivray: I note with pleasure what you said about what the Government is going to do, and I think it is quite proper that you should not tell us what that legislation will be, but perhaps the Government might throw out some feelers, and we might give you an expression of opinion upon certain subjects that may be dealt with. There is no doubt in the world but that the Act requires remodelling, and it is in the best interests of the agricultural exhibitions of the Province that it should be done. We have seen something in the press as to what is likely to be done, but we do not know how far that is inspired. I think you might ask for an expression of opinion upon certain subjects before the Bill is presented at the House.

The Chairman: Col. McGillivray has given me a great opportunity on this subject, but I am not going to leave myself open to criticism. I do not wish to reflect on you gentlemen as not being worthy auditors, but you can appreciate the indelicacy of my making any remarks that might be considered to cast disrespect on my colleagues. No doubt you will readily understand our Bill is largely based on resolutions passed by this representative gathering last year. It has in view the paying of the grants according to the work done. That, in substance, is the whole matter in a nutshell, and you can radiate from that almost as broadly as you care to. I believe that is a sound principle, and one that appeals to the great bulk, not only in public life, but in private life as well. In fact, it is going on the principle of that old saying, "The Lord helps those who help themselves," and I think that will convey to you an idea of the Bill. Our idea is to divide the Agricultural Societies from the Horticultural Societies. It is very patent to us all that their work should be kept separate, as far as possible, and I do not anticipate that there will be any strong opposition upon that point.

I am glad indeed to say that the present condition of public opinion in this country is calling our Horticultural Societies more widely into use. They are being used as avenues, in many villages and towns and cities throughout the country, for the purpose of beautifying public places, and that in turn is moulding and refining public opinion and the trend is entirely wholesome. We hope that the agricultural societies will be strengthened by this division; and that they will stand by themselves; and if they have no object to live for, then the sooner they die the better. I think that is, in substance, the sentiments of the men whom I have the privilege of addressing to-night, and if Col. McGillivray can take a text out of the remarks I have made, I will be more than delighted.

Mr. James Mitchell, Goderich: I am glad the indications seem to be that these two associations shall carry on their work, each on its own responsibility and each in its own particular field. I like that idea because I can see there is a vast difference between the work of the two. The work of the one can best be done at a season different from that of the other. I would like to most heartily commend the remark made by the chairman, and which I hope to see carried out in every town and village of Ontario, that where there are horticultural societies they shall try to beautify the streets and boulevards of the town. (Applause.) Let me point to the city of London where exists one of the societies that is doing splendid work in that direction by offering prizes for competition in beautifying streets and boulevards and residential property. London owes much of its natural beauty to the work that is being done in that way, and in that work the horticultural society is co-operating. I would like to see a horticultural society, which I know, spend its energies in that direction. It rather jars on one's feel-

ings sometimes to hear the very frequent admission made in a subdued tone of voice, "We are only organized for the purpose of helping the agricultural society," and I am glad we are going to have more honesty of work in that direction.

SCHOOL CHILDREN AT THE FAIR.

Mr. James Mitchell, Goderich: I am very enthusiastic in regard to enlisting the aid of the school children at our fair, and I would like to see the school children's day in almost every agricultural fair this coming fall. We tried once, on our section, to specialize it, and to my mind there was no more interesting feature of the fair than these children trooping into the grounds, and spreading themselves all over and I think that, "Children's Day" at the Industrial Fair in Toronto, is one of the brightest and best, and most successful days of the fair, and I think our associations will be doing good work, if we encourage the attendance and the co-operation of the children of our public schools at our fall fairs. It will be the best means of purifying these fairs, and we should make them so that they will be above reproach; because I do not think there is a man, who has children going to a public school of this country who would want to have his children come to a fair and see things that would do them harm. (Applause.) Therefore, I hope we shall enlarge on this idea of "Children's Day," and I would like to have some of the gentlemen who have tried it speak from experience and occupy a few minutes in enlightening those who are not so familiar with it.

The Chairman: I am sure we are quite pleased that Mr. Mitchell has opened up this subject. A number have come here to-night especially to hear this matter discussed, and we are here for the purpose of discussion, because, by that means, we invariably add to our store of knowledge. There are many who have had personal contact with this exhibition work and we would be glad to hear them.

Mr. McDonald, Shelburne: I am glad that Mr. Mitchell has brought up this question, because I think it would be a mistake to let it go by without having something to say. We are all aware that the boys and girls of to-day must be the men and women of the future, and they will have to attend to the fairs in their day. We have the children on the last day of our fair, and we send complimentary tickets to every school section within a radius of ten or twelve miles. We get the number of children from the teacher, and we send the tickets to the teacher, and we get the teacher to distribute these tickets among the children, and the teacher collects five cents per ticket. We have tried that for three or four years, and we have found it the means of making our fair a decided success, and we have felt the benefit of having the children with us, because when they come they bring the older people with them. If there is any better method than the one we have adopted, I will be only too glad to get the information, because it is information we are after, in order that we may take it home with us.

Mr. Sproule, Flesherton: I think it would be in the interest of the audience to hear in what way these children are handled.

Mr. McDonald: We leave them in charge of their teachers. The village of Shelburne has a large school, and the children turn out in a body, and in the rural districts they are in charge of the teachers. We cannot get the country people in in time for the procession.

Mr. Sproule: We tried it once at our fair, and the system we followed out was: We got the children together at a stated time, and supplied them

with a flag and a banner each. They were headed by bands of music and were marched into the grounds. It worked very well. We only tried it one season.

Mr. Bouguner, Simcoe: We have for several years held a school children's day. We have a three days' fair at the town of Simcoe, and although we felt we could not get along with less than three days, there seemed to be a little spare time the second afternoon that we hardly knew how to fill in, and at last we came to the conclusion to try this matter of getting the children out to take part. We felt that where we got the children interested, we would have the interest of their parents and friends. It took some time to get the matter worked up, and I would say that one of the best things you can do is to enlist the interest of your public school inspector for the riding. We tried it some two or three years before it began to prove a success, and now it is a decided success.

We offer prizes for the best four horse conveyance, and the teachers and children go to work and trim them up in very fine style. The horses are decorated with flags and so on. The procession is organized at the high

The Decorated Van in which a Class of School Children Drove to the Simcoe Fair.

school, and all march down, with the bands of music, in a procession. The children who are going to take part in competitive drills march round, and in that way we get up a great interest in the fair. I think that many of those who have been there will say they never put in a more pleasant afternoon than on this children's day. Prizes of $15 and $10 are offered for carriages, and then we offer prizes for fancy drills. Last fall we had enough entries to fill up the whole afternoon. Of course, in a day fair you cannot do it, but at a two day fair you can put in an hour or two, very much to the advantage of the society, and very greatly to the enjoyment of visitors.

Mr. Joseph White: Last year we had the first school children's day. Each teacher took charge of their own class, took them through the different exhibits and explained them to the best of their ability. We find it a very profitable and valuable means of educating the children, and we intend to carry it out further during the year, if possible. We intend trying to get the children from outside the town as well. We gave a prize to the farmer who brought in the largest family. (Laughter.) That was the most interesting part of the show. One farmer brought in fifteen. He was a Scotchman.

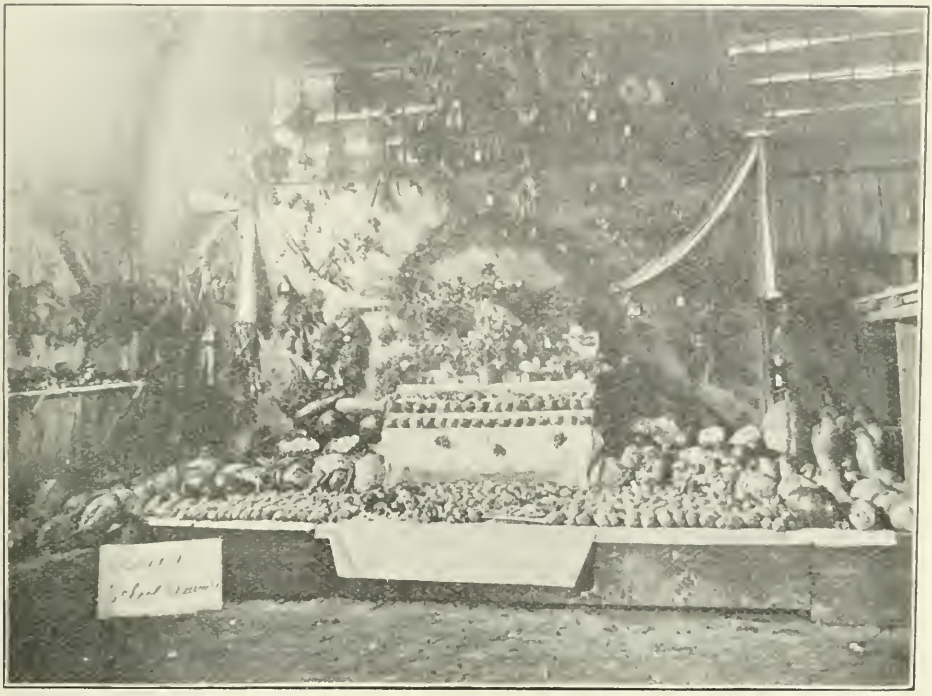
A Member from West Simcoe, Barrie: A number of years ago we thought it would be a good idea to have children's day. We have a three days' fair. We formed a procession in town, with the teacher in charge of his own pupils, and marched to the grounds. We did that for two years, and we found that the teachers rather objected to heading their pupils in the procession, and then we tried another scheme, and we have followed it for a number of years, and we are now sending tickets to every teacher within some fifteen or twenty miles to over forty schools altogether. We give to every one of these teachers a sufficient number of tickets in order to give one to each pupil in his school, and we give them free of charge, and this scheme gives general satisfaction. The pupils are all anxious to attend the fair, and they bring their parents with them and we know it has paid us in this way, and our board seem quite satisfied that, by giving free admission to the school children we are amply repaid by the extra number of adults who are brought to our fair.

Mr. Frank Metcalf, Blyth, Huron Co.: We have not introduced what might be called a school children's day. We have a good two days' exhibition, and it struck us some time ago that one of the desirable features of the fair should be educational. We heard from these fair associations and discussions through the press, the desirability of having, in connection with our fairs, expert judges. We could not get them from outside, and now we are trying to raise them of our own and we are doing it in this way. Some years ago we induced the board to offer prizes to the children for the judging of fruit. The board would not do it, and I gave the prizes myself to girls and boys under eighteen years of age who could correctly name the greatest number of apples on a table. The prizes were only $3, $2, $1, and in order to secure the first prize they were required to name, correctly, seventy-five per cent., for the second prize fifty per cent., third prize twenty-five per cent., and you would be surprised to see how many boys and girls were interested in the matter. They were scouring the orchards the whole summer, trying to find the names of the apples, and I can assure you that I have seen expert judges who would not come near these boys and girls, and we had good results. The parents were interested as well as the children, and I am endeavoring to induce the board to offer prizes to boys as judges of stock. We are going to ask the boys to come into the ring and judge, and give their reasons to the public for their judgment. A man does not complain so much if he does not get first or second prize, so long as you satisfy that man that he is getting fair play. Many a man has brought exhibits that were incorrectly named, and yet he was not told so, and could not understand why he did not get the prize. We are trying to crowd out objectionable features by introducing new educational features into our fairs.

Mr. Spence: How would you do with the ladies in the pastry department?

Mr. Walker, of Erin: As a member of the Erin Agricultural Society, I may say, we have adopted the plan of having, not a school day, but an educational day for the children, and we are giving prizes for the best exhibit made by any school section in Erin. We commenced doing this about four years ago, and we have found it to be one of the best educational parts of our work. The children of our section are busy getting some new thing ready the whole year, roots and seeds, and they have collected many things that I had never seen before which they have correctly named. I was so pleased this year with the exhibits they made that we had photographs taken, and I sent some down to Mr. Cowan. In one of our school yards there are fifty-seven different kinds of beets grown. At the exhibition they had grain threshed and in the straw, and fruit to no end—everything that

was grown on the farm. And this work was all done by the pupils of the school section. The Erin society always has had a school day; children under twelve years of age are admitted free, and when these children grow up they come with their fifteen cents.



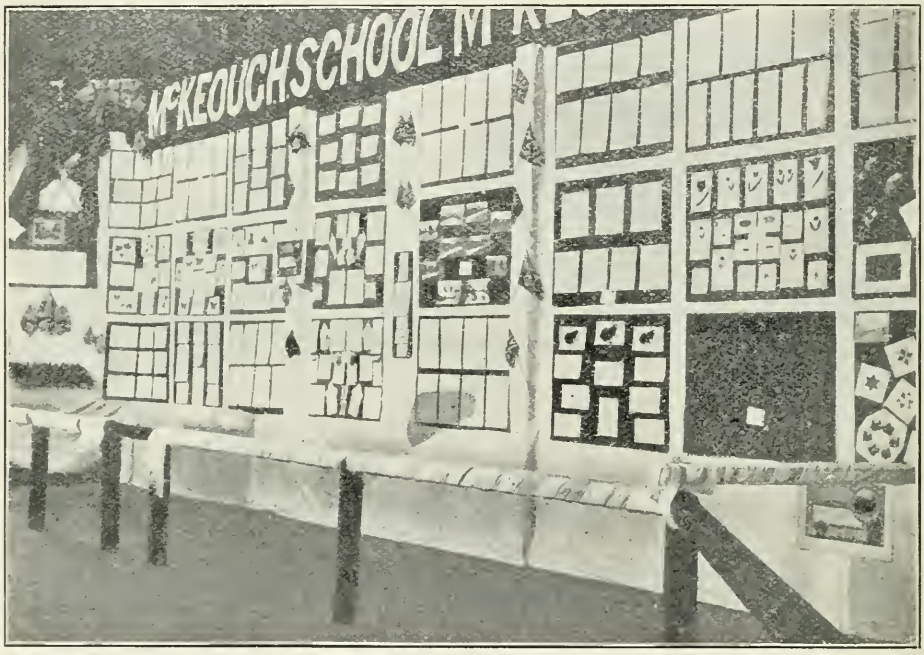
An exhibit of roots, and a collection of flowers, made by a class of school children, at Erin Fair.

Mr. Williams, Holstein, Ont.: In the township of Egremont we have held a purely agricultural show for thirteen years. The show has been in existence for thirty-eight years, and this year has been the best year we have ever had. We gave prizes three years ago for the best drilled squad of children. We gave prizes to the extent of $30. The first year we had five entries, and of course they all got prizes. The second year we had only two entries and they got prizes, but we found out it was not successful. One reason was that the teacher had to train the children during school hours, and the parents sometimes grumbled because it took up too much of their time, and the children had to be dressed, and that cost money. We gave prizes this year for the best drawing done by the pupils, and now we are going to try to have the boys do the judging and give reasons why. The farmer boys of this Province are going to be the men of the future, and we want to send these men to Parliament, like the Hon. Mr. Nelson Monteith. We do not want any more lawyers and doctors in Parliament; we want men of good common sense. (Laughter and applause.) I say the township society can exist without having horse races or side shows, and having nothing but a purely agricultural show. We have had it for thirty-eight years, and I am thankful that Erin has it also, because, perhaps the two will save the city. (Laughter.) We give no prizes outside our township. Over at

Flesherton, in East Grey, they have a very good show but they have another one within five miles of it. It is not a township show at all; it takes in two or three townships. We call our show a world's fair, and every boy and girl in the neighborhood attends, and some of the judges say that we have a show that is second to none.

William Channon, Victoria County: I am glad I am neither a lawyer nor a doctor. (Laughter.) I must say I very much appreciate the remarks made by the chairman this evening, and I understand the subject is school children. In reference to my friend's remarks about introducing judging for the boys the coming year, I think that is a splendid thing. I think the best way is to have the classes judged by the boys and then return the results to the clerk, and keep them secret from the other judges, and then have the judges go right along and judge the same class and not interfere with the boys at all, and I think that would be a splendid educational feature.

Mr. Thurston, Bobcaygeon: If we could get all the people interested in this work there would be no trouble. We did a little at this last year.



McKeough School Exhibit of clay and cardboard modelling, raphia work, drawing, etc., made at Chatham, 1904.

We gave prizes to the school children for some three years previous to this, for drawing and writing and collecting seeds and grains, and naming them correctly, and prizes for needlework to the girls. These prizes were given to children under fifteen years. This year we thought we would have an attraction at the show in the form of a procession, and we engaged a band and had the children take part; some of them were on horseback and others in carriages. We had two hundred children in the procession and we gave a flag to each child. Whatever you do for one you must do for all. It made a very nice display and the whole village was out, and the gate-keepers could not take the money fast enough after the children got inside. The

proposition that we made to the children was that we would give them a free pass to the whole fair. The procession started from the village school grounds and we feel that we were amply paid. Next year we propose to go at it on a larger scale, I think we will have some songs, as I think that is much better than tight-rope walking. You must understand that when you put your hand on the boy's head you interest the father and mother.

A MEMBER: I am satisfied that there is not a person within the walls of this room but who is interested in anything our children are interested in. I think there is not a house that is the correct thing without children, and no fair is a success unless a good percentage of children are present. One of the principal things that brought me here to-night was the topic of school children's day. The great point for us is to find the best means of bringing the children into the fair and of giving them an interest in the show. We charge an admission fee of five cents, and I rather think instead of the five cents being charged we will put them on the same basis that has been stated by one gentleman here, and we will allow them to come in free. We give prizes for drawing and nature study, and the display that was made at our fair last year will compare favorably with the Toronto fair. I have heard people state that they had never seen a more creditable exhibition of nature study, and we hope that we shall have the pleasure of seeing the Minister of Agriculture there at no distant date, when he can see for himself the truth of the statement I am making. The fair with which I am connected lives within the letter of the law, better than seventy-five per cent. of the fairs. We have no horse racing or anything of that kind to attract the crowd; we can get the crowd without it, and our fair is not in a less progressive state.

A MEMBER: There has not been a single idea thrown out to-night that they have at any one fair or all of them put together that we have not incorporated in the work in Norfolk Union Fair.

Mr. CRAIG, of Wellington: How long have you been doing that?

A MEMBER: It took some two or three years to work it out before we made a success of it. It is a matter of slow growth. If you enlist the services of your school inspector, that is the best way to work it out.

Mr. J. T. MURPHY: It took us four or five years before we made a success of it at Simcoe and last fall we had all of it that we had room for.

Mr. CRAIG: I am school inspector and have been fair secretary for eleven years, and the directors have given me a free hand in the matter, and I have done everything I could to make a success of the school children's day. For a time it worked well. This year it was almost a failure, and we gave prizes for nature study of $6 and $8. We have many girls and young ladies teaching, and they won't enter into competition against a man.

A MEMBER: It is not so with us; the lady teachers take right hold of it.

Mr. CRAIG: In the township of Erin the teachers are wearying in the work, and the ones that competed last year are tired of the work and exceedingly doubtful as to whether they will take it up again.

Mr. MCCREADY, Guelph: I am a representative of the school masters. I am a teacher of the nature study department at the McDonald Institute, Guelph, and we have a direct interest in the work of the agricultural societies, and I shall add to what Inspector Craig has said, that you have in this line of work imposed upon the school master, and the question for you to consider is, what are you going to do for the school masters for this, that you are demanding of them. It is a high class of work, because behind all your drills and nature study and the question of judging fruit and horses, is the teacher, who, throughout the year previous to your exhibition, has to

give considerable extra work in preparing the pupils for this thing that is demanded by the agricultural societies. And if the work is going to be successful educationally, what they get at the fair must be worked over after they go back into the school, and unless that is done a great deal of it will come to naught. And I ask the agricultural societies what they are going to do to uphold the tendency of the times to improve school teachers' salaries?

Mr. Geo. Martyn, Six Nation Indian: I represent the Six Nation Indian Agricultural Society in the county of Brant. I am president of that society, and I feel that I cannot go away without making a few remarks. Our society has been in existence for thirty-nine years. I grieve very much that we have not had any experience of school children's day. We look upon these children as the ones who are going to take the place of those who are now doing the work. We offer prizes for penmanship and drawing, and for naming plants, and we have been doing that for a number of years. We have not yet had a school children's day, and we have come to this meeting to get some information on the matter.

AGRICULTURAL SOCIETIES AND THEIR WORK.

By H. B. Cowan, Provincial Superintendent.

Before taking you on a trip around the Province to show you, by means of lantern views, the work being done by some of our societies, I would like to draw attention to a few points that I feel we should not lose sight of in connection with our societies. We should understand what is necessary before we can have a successful agricultural exhibition. What I found while on the trip I took to the United States, as I told you this afternoon, gave me a pretty bad jolt, and I would not like to think that our societies twenty-five or thirty years from now are going to be in the shape that many of them are in the United States. If we are to continue on agricultural lines we must understand what is required, and I have made a note of a few things that I think are requisite to the conducting of a purely agricultural exhibition and a successful one.

The first thing is that your exhibition must be located in a good agricultural section. From what I can learn the exhibitions conducted in our cities or large towns are not as a rule our most successful exhibitions. (Hear, hear.) It seems to be a fact that when you try to hold exhibitions in the cities or towns you are almost sure to fail. They tried it at Pembroke, at Kingston and at Arnprior and failed. At Brockville and at Belleville and failed, and are trying it again. At Hamilton, St. Catharines, Brantford, St. Thomas and several other points, and they had to give it up, often being several thousand dollars in debt. You can go through the whole Province and find case after case where they have tried to hold exhibitions in cities and towns and where they had to give up the attempt. One reason seems to be that the immediate tendency, when you get an exhibition in the city, is to put on attractions to draw the city crowd. Gradually the farmers are put in the background and the exhibition neglects the agricultural features on which its success really depends. What is a successful agricultural exhibition? Is it to get out a big crowd of people who come together to have a high old time and go home without having learned anything, or to have a smaller exhibition with people who have come there to learn? We have a lot of societies of that kind, and that is the kind that the

majority of you men represent, and I feel that is the class of societies that we want to encourage, and that we are here to encourage, and that is what the Government grants were given for.

The second requirement is that the section must have plenty of good stock. There are a lot of societies in the Province that are trying to hold exhibitions in sections where there is almost no stock at all. They are sure of their Government grant and they hold an exhibition without regard to whether they have the stock or facilities, and if you will look over your societies on these points, you will know just about how you stand.

Third, you must have a responsive community. There are a number of societies where the directors seem to be pulling at loggerheads with the farmers in the section or the people in the town. When the town people won't give them a hall for their meetings the directors get mad and everybody is fighting. Where that feeling exists it is impossible to hold a successful exhibition. Everybody must pull together in order to ensure success.

Then, of course, you should have a good board of directors, and you should have three or four men on that board who are hustlers. You will find generally that three or four of the men do almost all the work. You will find that the societies that are getting away from the agricultural features of their work are weak on some or all of these points.

Before our societies can be thoroughly successful we must have a good Act under which they can operate. The present Act is very defective. It has been unfair to many of our societies. It has helped to keep up societies in districts where there should not be any societies, and it has not been helping societies in proportion to the work they have been doing. This business of distinguishing between district and town societies is a mistake. A lot of men are hanging to that township idea, and I have an impression that when the Hon. Mr. Monteith gets up in the House to move his new Act, a lot of men will get up and tell him that they have got to have their township shows. The Province of Ontario and the State of New York appear to be the only places where they have tried to conduct societies on that line. The idea was to have a little show in each section, and that the people who exhibited there would go on to a bigger show, and from there to Toronto. The argument was that little shows are required to draw the exhibits out at first. It sounds all right, but it has not worked out that way. By giving a larger grant to a show in a poor section with poor directors you cannot make it as good a show as another with a smaller grant but in a good agricultural section and with hustling directors. And yet that is what we have been trying to do with many of our shows. I can quote you many places where the township societies are getting the smallest grants but giving more for agriculture than the district societies.

I would not want the district men to think that there is any intention to cut off the district societies. There is not. The grant will be made on the basis you have requested it should be, and the grant to some district societies will be increased. We have some excellent district societies, such as the Norfolk Union, and its grant will be away up, because it has been working purely on agricultural lines. We have got a lot of little bits of shows that are getting grants and that are not giving half as much for agriculture as they are getting. They tie their stock up to the fence corners and the money goes around to a few. There are a number of shows like that, and I would be surprised if a number of people in this hall do not know some of them in their own districts. These societies will die a natural death.

A Member: How are you going to stop them?

Mr. Cowan: I am inclined to think that when such societies are placed on the same basis as other societies and get their grants in proportion to what they give for agriculture that that will soon stop them. They have been able to hold exhibitions at those points simply because they have been getting fixed grants, and if they get their grants in proportion to what they do, they will have to go under or improve greatly. Some of the small societies however have not beeen getting their just share, and their grants will be increased.

A Member: Can you define a small society?

Mr. Cowan: A society giving two or three hundred dollars in prizes I would call a small society. We have some that give only $75 or $100.

A Member: Do you call a township society a small society?

Mr. Cowan: Some township societies are among the largest in the Province.

A Member: Does the Industrial get anything from the Province?

Mr. Cowan: Not a cent.

A Member: How are you going to determine the amount that is given for agricultural purposes?

Mr. Cowan: My own idea is, that it should mean money expended for the purposes covered in the Agriculture and Arts Act, including money expended on buildings.

A Member: How are you going to depend on the reports that you get?

Mr. Cowan: That is why it has been proposed to appoint a Provincial auditor to check over these reports, and I think that would be one of the best safeguards. In Maine and New York they publish the reports of the societies showing how much is expended for cattle, sheep and swine, etc.

Mr. Charles: We publish it in Peterboro.

Mr. Cowan: It is not published so that the whole Province could see it. We have nearly five hundred societies in the Province, and it would require a small book to hold such a report, but I think such information would be valuable, and that it would pay to publish it.

A Member: How could one auditor do the whole Province?

Mr. Cowan: He could not do it, but there would be no need of more than one, because there are a great many societies that turn in accurate reports, and the auditor would not require to go near them.

A Member: How do you know?

Mr. Cowan: We know because we receive the reports at the Parliament Buildings. Of course, we do not know that they are accurate, but if they are published, the other societies would know, and if we had an auditor it would be possible to check the accuracy of reports thought to be fraudulent.

A Member: If they made a return of the list of prizes you would know?

Mr. Cowan: In Maine and New York they check over the prize lists with the amount claimed to have been paid out, and in some cases they have found fraudulent reports in this way.

A Member: Supposing I gave a grant of $5 for the best 20 pounds of butter, the butter to become my property, would you say that was a straight grant of $5 for agricultural purposes?

Mr. Cowan: My opinion is that a special prize in kind would not be allowed to count, but where cash was turned into the society, and the directors were allowed to spend that cash in any way they liked, it would be counted for agricultural purposes. I have touched on these points because I may want to refer to them later on when the views are being shown.

Mr. Cowan then gave a lantern exhibit of protographs that had been taken at different fairs throughout the Province, showing some of the very best fairs, their buildings, and the crowds on the grounds prize, rings, etc., and also some of the worst fairs in the Province, showing where cattle were tied up to the fences, poultry, pigs and sheep judged from the waggons, etc.

AGRICULTURAL EXHIBITIONS AND THE SCHOOL CHILDREN.

H. B. Donly, Simcoe: I have been a member of our fair board for a very short time. I suppose we are all impressed with the idea that everything we do at fairs, no matter what it is, should be for the purpose of educating the people, and in order to do that we must use all the efforts we can to get people to come to the fair, and then give them instruction while they are there. We were confronted with this state of affairs in our county. We had extended the show from a two day show to three days, and we found we had only lengthened the agony without giving the people more than they had before. In other words the second day was largely a repetition of the first, getting together of exhibits and almost no gate receipts. People had been coming to the fair year after year, and we had not been giving them anything but a purely agricultural exhibition. We had no attractions, as they are called. We did not call in the aid of the ladies and gentlemen, who when they are not working at the fairs are generally to be found in the circus. We had not gone in for anything that might be styled horse racing, but I do not wish it to be understood that I am at all opposed to that particular branch of agriculture. The majority of our fair boards are opposed to holding horse racing as we see them at horse meets, and we were up against the proposition of having something in lieu of this to prevent our attendance from falling off. I think that was the motive that prompted our directors in going in for a school children's day, as we call it. The day is not exclusively confined to school children; we put on a programme of various features, but all of a local character; we do not hire any attractions whatever.

It took some time to educate the people up to school children's day. We found we had to get the sympathy of the public school inspector and to get him to go out among the teachers and school children and get them to prepare for the day, and we put on six events. One was simply the best attendance of a school in a carriage, for which we offered prizes of $15 and $10. Then we had three events of marching, giving prizes of $8 and $6 and another prize of $10 and $8. In addition to that there were prizes offered for calisthenic exercises. These exercises were not part of the curriculum of many schools. Last year this exhibition was seriously interfered with owing to the weather, but if we had good weather we would have shown you gentlemen who were there a very attractive programme. We offered prizes for nature study. Prizes are offered for collections of grain and injurious and beneficial insects.

More attention is being paid to this matter now than there ever was before. Our idea is to add as much interest as possible to these branches of school work by offering prizes, and we have tried to work along with those persons who are directly interested in education. The first year we got only one or two entries, but last year there was a creditable exhibit. It takes a great deal of hard work to prapare an exhibition that will be comprehensive. One school pupil had a collection of injurious and beneficial insects

that must have run into the hundreds, and he had made this collection himself, and if we could get all the school children interested in such a thing as that it would be an immense benefit to the country. Some exhibitions only go so far as to ask their school children to give an exhibition of penmanship or something of that kind, the idea being to bring the school children to the exhibition. That may be a batter plan than ours, but I am in favor of the plan we are adopting. We have found school children's day to be a very beneficial feature. We also give prizes for running and jumping and things of that character, and we wind up the afternoon with jumping or horse-back sports for which we offer prizes. My advice would be that all those fairs that are looking for something new should try school children's day, and give it some consideration.

Mr. H. C. Hoar, Bowmanville: Were they school exhibits made by individual scholars or were the school represented?

Mr. Donly: Our rules allow individual scholars to compete in some classes, but for a marching display it must be by the school. One school might have an attendance of thirty or forty and other schools only twenty, and some thought that the schools in the towns would keep the rural schools out, and in order to prevent that we gave prizes for the different classes of schools. A school that had an attendance of twenty would not have to com-

School Children's Drill at the Simcoe Exhibition.

pete against a school that had an attendance of forty. We graded the schools and we gave prizes to schools in incorporated villages, and prizes for schools in towns.

A Member: Did you charge the schools an entrance fee?

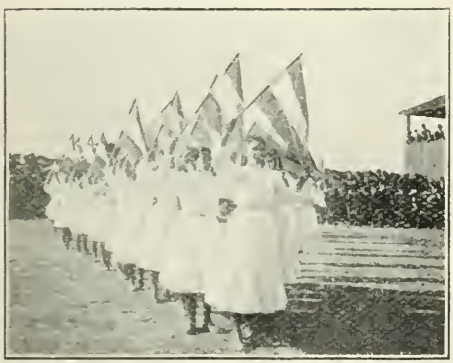
Mr. Donly: We issue tickets to the teachers and make it free to the children.

Mr. Riley, East Peterborough: I have been greatly interested in Mr. Donly's speech. I represent East Peterborough. We have what we consider a very valuable drawing card, and that is an exhibit of injurious weeds and seeds and we also have the plants, the same as the lecturers to the farmers' institutes bring around, and Mr. Newman, of Ottawa, who was up there two years ago examined the plants and seeds and he found very few mistakes. We give $35 in prizes for that exhibit.

Mr. Laidlaw, of Guelph: We have the most comprehensive exhibit of school children's work in the Province. Some of you have spoken about

giving prizes for insects, and others about giving prizes for weeds, and a great many other things. We do all these. We offer over $200 in prizes for competitions by school children, and last year we had a building much larger than this room filled with school children's exhibits, and it was said by the school teachers to be the best educational exhibit they had seen, and professors from the Ontario Agricultural College said it was the best thing they had seen in Ontario.

Some six or seven years ago we began with the farmers' institutes, and I got them to hold in our district what we call children's institutes, and give illustrated lessons to the children in the schools. Last year we had fifteen or sixteen schools in our district compete, and I believe next year we will be able to put up such an exhibit as will not be seen anywhere else in Ontario. I think, if we can induce Mr. Cowan we will hold a model fair in Guelph that will be worth seeing. We have not found any trouble in the matter. We have 600 to 700 entries. One competition we have is



School Children's Drill at Brussels Exhibition.

School Children's Drill at Brussels Exhibition.

the naming of different classes of fruit and birds and animals. We have a tent erected on the grounds and one class goes in at a time. We have an advantage over other sections in the fact that we have professors from the Agricultural College to help us.

I have had inquiries from a number of schools wishing to have our list to prepare next year for their own district. We get some of our city merchants to give special prizes, and the schools all get a half holiday. We do not have any parades or waggon loads going in, but we charge 10 cents admission and they are all willing to pay that fee and come in. Last year we had a manual training class from the city schools, and it was a credit to the children. We gave prizes for groups from each school in addition to individual prizes, so that it gives every school a chance and every individual a chance.

Mr. McCready, McDonald Institute: I wish to substantiate what Mr. Laidlaw has said. It was undoubtedly of the right kind, and if not entirely, it is well on the way to being a purely educational exhibition. I wish to emphasize the fact that I think you might be making a mistake in selecting a school children's day. I have no doubt that many of you may have an increased attendance, but I think it is a mistake. You can do the schools of the country a great deal of harm, and you may put extra burdens on the teachers that is not fair to put upon them, and I rise to urge that you hold in view in future, as far as you can, the welfare of the child in the first

place, and the schools in the second place. When you consider having a school children's day at the fair, schools that make the best collections and get the prizes may be falling behind in educational work, there should be something else behind it, and there should be prizes for school children's gardens and gardens at their homes; see that the children keep the grounds around their schools in proper condition. These things are more important than the getting together of a fancy exhibition. I know of many cases where teachers are neglecting their studies for the sake of getting and retaining the reputation that is obtained at the fall fairs. Competition is keen and harm may be done. I think it would be better to have the prizes, not in cash, but in kind, a book or a subscription to some good paper, or a tree or a bulb or some such thing as that, that would be of value to the children and something that would spread over many years. You are doing

School Childrens' Drill at Brussels Fair.

a great work, and the most important thing at agricultural shows is the children, and the most important thing to consider in this country is the school master and his work.

Mr. George Wilson, Creighton: This is a question I am very much interested in. This school children's day is the drawing card at the Creighton Show, and we have horse racing and balloon ascensions, yet the school children's day is the drawing card. Every school is expected to send in the name of their school to compete for writing and drawing. We let them all in free, because we think that every child that comes in free brings the father and mother, and it works very successfully.

The Chairman: Have you horse racing at your fair as well?

Mr. Wilson: We have horse racing.

A Member: I am against the idea of holding fairs just for amusement. I was glad to hear our friends, Mr. Laidlaw and Mr. McCready, laying down what they called advanced lines. We hold a clean fair; we haven't a track large enough for horse racing, but some of our people would like to have horse racing. They hold horse races at a fair near us, and the men go to the hotels and drink and bet and the whole thing is demoralizing to the children and to the people who engage in it.

A Member: I have been president of our fair for twenty-one years, and I find the most important advertisement we have got is our school children's day. We think it is more important than horse racing, and although we have horse racing I am prepared to say to-day that I can draw more on the school children's day than we can for the horse racing. We allow the teachers and scholars to come in free.

The Chairman: The reason I asked this gentleman the question as to whether they had horse racing at their fair was to ascertain the fact as to whether they relied on that or the school children's day. Horse racing no doubt is contrary to the law of the Provincial Parliament, but Daniel O'Connell said he could drive a coach and four through any enactment that was ever put in the statute books, and I think the fairs of this Province have been doing it right along. The efforts that managers of fairs societies are contriving to secure in order to make their fairs a success are something extreme, and until we arrive at the point where grants from both the Government and the county councils will be made of such a character as to enable the management to drive from their fairs the objectionable features and horse racing we cannot expect that the managers will do it. They have to do everything they can to increase the financial results of their fairs.

I think the school children's feature has been well discussed, and I think this Association owes a vote of thanks to Mr. Donly for the way he has laid it before us this morning.

Moved by J. H. Davidson, President of Cobourg Central, seconded by Robert Vance, (East Durham): "That Mr. Cowan be requested to have his report printed in pamphlet form as soon as possible and sent to the secretaries of the different societies in advance of the regular report of this annual meeting, which we request should be issued as soon as possible."

The motion was carried.

The Chairman: The secretary has received a communication from the secretary of Thorold Association that this Association should pass a resolution that all grade males should be castrated. (Some laughter.)

The Chairman: I am pleased to have at my right hand the president of the Eastern Fairs Association, Mr. Field, of Brockville, and I am sure you will all give him a hearty welcome. The next thing on the programme is a special demonstration of keeping fair books by the secretaries of the societies.

Mr. Millar, Durham: We have listened to an able discussion this morning on one feature of fairs read by Mr. Donly of Simcoe, and I wish to move a vote of thanks to Mr. Donly for the able manner in which he has conducted this discussion, one of the principle things in connection with our fairs.

The motion seconded by Mr. Leitch, North Victoria, and carried.

NEW BUSINESS.

Mr. Pierson, of Weston: I have no doubt there are other secretaries here who would like to have seen a demonstration of keeping secretaries' books. I would like to see if there is any better system than the one I am pursuing. I think most books could be filled out more satisfactorily and it would be much easier to make the Government Report.

Moved by Geo. E. Lee, Highgate, seconded by Robt. E. Cowan, Galt: "That whereas each agricultural society is entitled to two delegates to the

Association of Fairs and Exhibitions; and whereas we believe it is in the best interests of agriculture and agricultural societies that each society should be represented, and equally represented at the yearly convention of this Association; and whereas all agricultural societies are not as favourably situated to Toronto, the place of the holding of the annual meeting, and therefore it necessarily is much more expensive to some societies to send delegates than to others. Resolved, that this convention amend the by-laws of the Association so that any society may, if they so desire, send one delegate who will carry two votes and fully represent his society in any business that may come before the convention."

The CHAIRMAN: The effect of that would be to give one delegate from each society a double vote. Are you ready for the question?

No. 1.—Sheep and swine pens of the Burford Society. There are 50 in all, 10x8 ft. each. This is the cheapest kind of pen. Considerable lumber is saved by using the fence as a wall for the pens. They do not afford protection from sun or rain but are much ahead of the custom of showing animals in crates on wagons as is done by some societies.

Mr. LEE: It was contended a year ago by our eastern friends that the expense was very high for them coming the distance they had to, and we find that it is quite a heavy expense for us. Our delegates last year cost us nearly $40. We had to leave home Tuesday, and it will be four days before we can get back home again. Societies that wish to send two delegates will be at perfect liberty to do so.

Mr. WALLACE: How would it be practical for a man to vote twice except by holding up both hands instead of one?

Mr. ROBERT E. COWAN: As seconder of this resolution I may say that it is not necessary to add a great deal to what has already been said. The motion explains itself. I believe it is desirable to have two delegates present from each association, but we agricultural societies that are at a great distance from Toronto would be at big expense in sending two delegates. I think it would be to their advantage to have this motion passed, especially for New Ontario and the eastern districts. The question came up yesterday when this Association endeavored to have the department pay part of the expenses of the delegates here present. I think this resolution would largely remove the necessity for so doing. The motion carried.

HORSE RACING.

Moved by Wm. Channon, seconded by Johnson Ellis: "That whereas there is a general desire by the public to have horse racing at the exhibitions of agricultural societies, and such races are now held under the guise of speed ng in the ring; and whereas section 20 of the Agriculture and Arts Act which prohibits horse racing at agricultural exhibitions is practically a dead letter owing to the general desire of the public for such races; and whereas it is advisable that all laws should be properly enforced or repealed; therefore this Association respectfully request the Legislative Assembly of the Province of Ontario to repeal section 20 of the Agriculture and Arts Act, and leave the question of horse racing to be decided by each agricultural society for itself."

Mr. Channon: As mover of that motion I would just like to read in connection with that a copy of the Act. "It shall not be lawful to carry on any horse racing other than trials of speed under the control and regulation of the officers of the society during the days appointed for holding

No. 2.—Swine pens of the Otterville Society. These pens, being built in the open, cost more than pens such as shown in illustration No. 1, but are very convenient for sightseers. In the pens here shown there is accommodation for 50 pigs. They cost $75.

exhibitions by any district or township society at the place of holding an exhibition or within five miles thereof."

Then in the second section we get. "Any person who is guilty of a violation of this Act shall be liable, upon summary conviction before a justice of the peace to a fine not exceeding $50 or imprisonment in the common gaol of the county for a period not exceeding thirty days."

It is very evident that we ought to live up to the law of the land, and it is evident that horse racing is being conducted by many of the agricultural shows in the Province. Those of us from the south riding of the county of Victoria feel that it is important that we should carry on horse racing. I feel that it is naturally educative, and if it is against the law, and we are in danger of being taken before a Justice of the Peace, and taken to the county gaol, I appeal to you that we should pass this resolution so that it may go before Parliament, so that they may have the true meaning and feeling of this Association, and I hope you will give the motion due consideration. I know, as far as we are concerned, it is one of the drawing

cards to our association; by holding horse racing we are enabled to increase our prize list from year to year. We have a grand stand that seats 2,500 people, and it is crowded on both days to full capacity.

Mr. Ellis: As seconder of that motion I may say I am president of the South Ontario Society, and I think we have a right to be considered. I was offered $50 for the privilege of putting on a "wheel of fortune" on the grounds,, and I declined it. This same man that we turned away from the grounds can turn around and have us fined for having horse racing, and I do not think it is a pleasant position for the directors to be in.

A Member: Man is a peculiar animal. I happened to be president of the Farmers' Institutes of the county of Peel for the last two years and I have been connected with that institution for perhaps ten years as director, and I know whereof I speak when I say that man is a peculiar animal. There are men whom we want to educate, and they are the men that we cannot get at. I rise to put in a word of warning with regard to this resolution. I think we are travelling a little fast. I do not think we have any right to pass a resolution here that is going to take power from individual societies throughout this Province. We do not go to extremes in Bolton. We have a race track and we hold trials of speed, and all the horses that compete are owned by local men. We have got to have some attraction to keep the people there and something to draw them there. I think we have no right to pass a resolution to that effect. I think we have a right to be left alone to use our judgment in these things.

Mr. Channon: There is nothing in the resolution advocating any kind of attraction.

A Member: To my mind anything that is wrong under any circumstance is wrong under every circumstance. We have all agreed upon this point from the argument set forth yesterday, and to which we listened with a great deal of attention, that horse racing in every respect has a demoralizing effect upon every society or class of people who patronize it. (Cries of "No," "No.") Just wait until I make myself clear on what I have to say. I say that horse racing has a demoralizing effect and it is followed by parties who are of questionable character. (Some Cries of "Never." "The best characters in the land.")

The Member: Not always. I say as a rule horse racing is followed by parties who are of questionable character. (Cries of "No," "No.") What is considered wrong in one case must be wrong in another. If it is wrong to have horse racing, why in Heaven has the Government placed itself in such a position that we are in doubt as to what they mean with reference to this horse racing. Why is it that they allow directors to put on speeding in the ring? What is the difference between speeding in the ring and horse racing? If horse racing is to be approved of by these organizations and commended by it, can anyone in this audience tell me why they put it under such a heading as speeding in the ring? Why do not they come out plump and square and say horse racing is demoralizing?—and any person who takes up this work will find it is so. Why is it they have to put it under the heading of speeding in the ring if there is not something questionable behind it? What I think would be the proper thing for this organization to do is to have the Government put itself on record, so that there will be no question whatever as to what the meaning of horse racing is. If we are going to have horse racing let us have it full and free and above board and with everything that is associated with horse racing. If it is a matter of speeding in the ring, let us know what it means. No director should be placed in the humiliating position of being subjected to the

whim of any person who is liable to come before him and bring him before a magistrate and make him pay the penalty. This Association should know beyond doubt what it is permitted to do with regard to horse racing, and what I still maintain is this, that if it is right for one society to have horse racing, it is perfectly right for the other societies to have it. We have a fair, and there is another fair fifteen or sixteen miles from it, and at our fair we do not allow horse racing at all, and we have as good a track as there is in the country.

A MEMBER: You have no horses?

Another MEMBER: Have you speeding in the ring?

The MEMBER: Yes.

A MEMBER: Does the horse that comes in first get the prize?

The MEMBER: No. Last year we had speeding in the ring. (Great laughter.) The horse that came in first was a quarter of a mile ahead of the others and he did not get the prize.

No. 3.—General view of the sheep and swine pens at the Sarnia exhibition. There are 100 pens in all; 10 for sheep, that are 12x16 ft.; 50 that are 8x8 ft., and 40 that are 6x8 ft. Figures of cost not available. When societies that have pens, like those shown in illustration No. 2, need more accomodation expense is saved by backing the new pens against the old ones, thus saving lumber. The man on the pens is one of the Department's judges who found his work difficult as there was no provision for driving the animals out for purposes of comparison. These are good, servicable pens.

A MEMBER: Because he was a ringer?

The MEMBER: No, he was not a ringer. (Cries of "Question.")

The MEMBER: The other town is about fifteen miles from us and they have horse racing in every sense of the word, and some of the members of the Government were there and witnessed it.

Mr. PRICE, Aylmer: I take great pleasure in supporting this motion, for no other reason than the fact that I believe the directors of the different agricultural societies throughout this section of the country are men who are capable of judging what is best for their own section to make the fair a success agriculturally than any other person is. (Applause.) I may say that on our board out of thirteen active members ten of them are farmers, and as good farmers as can be found in the country (applause), and I am sure they have an honest interest in agriculture and they take a great interest in the fair, and they introduce nothing of a questionable character, and our fair is unique in its history.

THE AYLMER FAIR.

Supt. Cowan: Mr. Price represents the Aylmer Fair and he has got figures and facts at his fingers' ends that should interest you. I hope that you will listen to him carefully.

Mr. Price: We found our fair a few years ago in 1897 in such a condition as possibly some other fairs are in at the present time. That is that we could not get the people interested. We could not get the crowd. They would not come out; it had been tried in the city of St. Thomas, and they made a failure of it, and the fair had to come to Aylmer, a small town of 2,300 people, and when we undertook the fair the question was: How to make a success of it agriculturally? We started out with the idea that it could be done with races and attractions. We are one of the fairs that never call horse racing speeding in the ring. (Applause.) When we came to this Association some four or five years ago, and I had the honor of making a short address on the question of attractions, one gentleman got up and seemed to be thunder struck that I would have the audacity to speak on speeding in the ring as races in the presence of the Minister and Deputy

No. 4.—The swine pens of the Almonte Society. Cost $600. Pens of this kind are the next step in the evolution of pens like those shown in illustration No. 1. These pens afford protection to the stock from rain and sun.

Minister. However, we have always been out, flat-footed, square and open, and we never made any question of it, and I say right here that if there are societies like the one in Simcoe who are making a grand success of the fair without attractions and races, I would not ask them to change. I would advocate that they should stay right where they are. But where societies are up against it like ourselves, and cannot make it a success in any other way, then I say put on the attractions and races, and I will tell you what our fair has done and how it has worked out.

1897 was the last year in which we ran a fair without any attractions. I think it is fair to put the money we receive over and above what we would receive without races and attractions against the cost of the races and attractions. In 1897 we were running a little two day fair and to-day we are running a five day fair, day and night, and at the same time we have built up grounds which I think Mr. Cowan will tell you for their size are second to none in Canada. We put the receipts from the gate at nights, from which we could not possibly receive a dollar if we had not any attractions,

and from the grand stand from which we could not receive a dollar if it were not for the attractions in the day time, against the cost of our attractions and races, and to show you how it works out I will read you a few items.

The total gate receipts in the day time in 1905 were $829.15. Total receipts at night $354.20. In other words we took in nearly half as much from the gate at night as in the day time, and you must remember that we are only a small fair.

A Member: What is your programme at night?

Answer: Clean vaudeville performance in the open air.

The total receipts from grand stand in the day time were $237.50, at night $259.85. We took in $22.35 more from the grand stand at night than we did in the day time. For the first two nights we charge 10 cents and for Wednesday, Thursday and Friday we charge 25 cents. The total receipts day and night were $1,183.35. Grand stand $483.40. We received nearly half as much from night as day time. Total receipts from the grand stand in day time $1,064.70. Our total receipts from gate and grand stand at night were $612.05. More than half as much at night as we had in the day time.

As regards the races last year we offered in prizes $460. I might say that we have often offered a good deal more than that, but they do not always fill up. Last year all the races did not fill up, and we had running dashes, and some trotting races, and after deducting the entrance fee which we received from the race men our races cost $164. That is all it cost us.

As regards the attractions, we made a contract last year with an amusement company of New York to place the programme for $450. They were to pay all expenses and we had nothing to do except to give them a check for $450, at the conclusion of the fair, if satisfactory, and they put on a programme that would last two hours. We made it clean, there was no leg show. There was balancing, etc., and moving pictures at night.

A Member: How many nights?

Mr. Price: Five nights and an afternoon as well. Three afternoons and five nights. The total receipts of the gate and grand stand at night only were $612.05. Our attraction cost us $450 and piano and pianist $26 making a total of $476 so that from the night proceedings only we paid for all our attractions and had $136.05 to the good. We could not have got one dollar from the evening show if we had not these attractions. The total receipts from the grand stand were $493.40. Gate at night $354.20; total $847.60. The total cost in every shape and form of the races and attractions was $640. So that we paid for our attractions and paid for our races and had $207.60 to put to the agricultural part of our fair after we got through.

A Member: And had lots of sport?

Mr. Price: We illuminated our grounds with electric lights. We had the arc system and the incandescent. But I think next year we will dispense with the arc system altogether and use only the incandescent. Light and water cost us last year about $124. We had a lot of wiring to do that we will not have to pay for next year. In 1897 we ran the show without any attractions, and we received for membership fees $506, and we had to canvass for that, and we had to beg people to join and give men ten per cent. commission to go out and get members. Last year, without canvassing or asking a man for a dollar, we received in membership fees $1,073.56, and that was largely made up from people who would not join the fair until we had attractions; young fellows around town and from the country who go in and get a ticket and take their girl in in the day time

and at night. In 1897 we received for booth privileges $82.50 and last year we received for booth privilegs $243.21.

Last year we had a dining room on the grounds. We made arrangements with the Ladies' Aid Society of the Methodist Church, and they gave a good 25 cent dinner, and we gave them the use of a building and the privilege of using the grounds, and we supplied them with electric light and water, and put in a stove for them, and we took 25 per cent. of the total receipts, and we received $72 as our share of the revenue. Of course a good deal of the stuff they used was sent in by their friends around the country, but after they got through they had a clear profit of $175, so that it paid them and it paid us.

In 1897 we offered in prizes $1,043.25, and last year we increased that amount to $1,748.30, so that you can see we did not neglect the agricultural end of the show. There has never been an educational feature that we have not adopted. We are just as anxious to have the agricultural end keep up as any other fair. In 1897 we paid in prizes $759 and last year we paid

No. 5.—The sheep pens of the Orillia Society. Pens of this kind are constructed on the same plan as those shown in illustration No. 4, (using the fence as the back wall) but are more neatly built and, of course, cost more. Figures of cost not available.

$1,290.90. In 1897 our receipts from the gate and grand stand were $693.58, and last year they were $1,676.75. The amount that we offered in prizes for agricultural exhibits was larger last year than any other year in the history of the fair. As I said before, I would not recommend you to change, but if there is a society that is not doing good work or that is going into the hole, I advise you to look into the figures and facts I have given you, and if you will do that I feel that what little I have said will not have been in vain.

A Member: What kind of races do you get for $450 that you can spread over five days? We give from $700 to $800 for one day in races, and we do not get more than enough to make one good day's races, and we have a good reputation with the horsemen. I cannot understand how for $450 you can get horses enough to spread over five days?

Mr. Price: We attempted when we first started to have races every day, and we used to give between $1,200 and $1,300, but we found that it did not pay, and we found that it was doing exactly what we did not want it to do. It was making the fair more of a race meet and detracting from the agricultural side of it; and we began to take off the races on some of the

days, and last year we confined the racing to one day. Monday and Tuesday were more like opening days and then Wednesday we had the races. We get the performers for the night show for the same price that we would have to pay if we had them in the day time only.

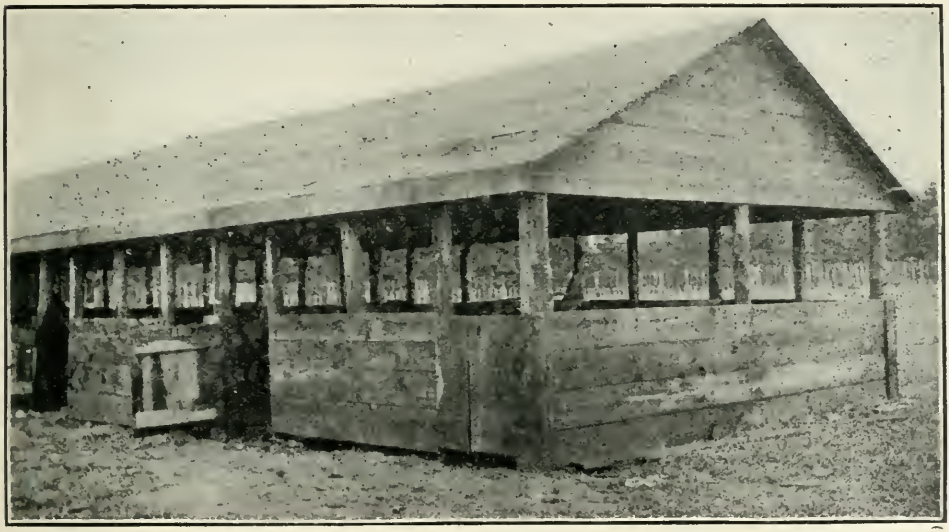
We have a school children's day something the same as they have in Simcoe. Of course there is kicking by some people, but I think we are doing what is right, and we are perfectly satisfied.

A MEMBER: Do you allow pool selling?

Mr. PRICE: Nothing in the way of pool selling or gambling of any description. It is impossible to prevent little private betting. People will pool straws as to which horse is going to win, and you cannot stop that kind of thing, but I never saw a dollar bet on our fair grounds.

A MEMBER: Do you stop horse racing on school children's day?

Mr. PRICE: Yes, because we want to make school children's day stand on its own footing, and give the children the full benefit of that day. You cannot have racing on school children's day and bring the people there, because there would be danger to the children in crossing the track. We



No. 6.—The sheep and swine sheds of the Woodstock Society. Note the door to each pen. This shed is 16x168 ft. and cost $300. These pens, having a roof, are an improvement on those shown in illustration No. 3.

must have all the school children's sports on the track, and we cut out the races for that reason.

A MEMBER: Would this gentleman give us a definition of what horse racing is? The only money I ever lost betting was fifty cents which I bet on a Clydesdale team drawing, and I would like to know what the sinful part of horse racing is?

Mr. PRICE: I would not undertake to answer that question.

A MEMBER: At what time of the day do you hold horse racing?

Mr. PRICE: In the afternoon. We run the afternoon show in this way. We will have one heat, say at one o'clock and at 1.15 we will call out carriage horses and then after they have been shown we will put on a heat, another race and then another class of carriage horse. We have a good,

big band playing on the grounds in front of the grand stand, and we have special attractions going on all the time.

A MEMBER: Don't you think that would take the place of your vaudeville performance in the afternoon?

Mr. PRICE: It might, but it does not cost us any more to have it in the afternoon as well as at night. Some people will go there and say they would not give a cent to see the races and others want to see them and we have both, and our patrons have a good afternoon.

A MEMBER: Do you display your carriage teams on the same track as you have the races?

Mr. PRICE: Yes, right in front of the grand stand. The population of Aylmer is about 2,300, and for the night programme we have as large an attendance as we have in the day time. The people come and pay twenty-five cents in the morning and get their dinner on the grounds and stay for the night performance.

Mr. CHARLES, Peterborough: There is some good in the worst of us, and some bad in the best of us, and it does not behoove any of us to speak ill of the rest of us. (Laughter.) I object most strongly to these insinua-

No. 7.—The sheep pens of the Barrie Society. Cost price not available. Note the passage down the centre. This is an improvement on the pens shown in illustration No. 6, as in rainy weather there is protection for the spectators.

tions about horse racing being demoralizing. I do not like to listen to it. It sounds hypocritical. I do not want to go on any further committing illegal acts. If it is wrong to have this horse racing let it be stopped. The Government should not wink at it, and we should not be put in that position that any fellow in the town can bring a director up and have him put in gaol. (Applause.) Any man who conducts an exhibition or a show cannot please everybody. Somebody is bound to be dissatisfied, and sometimes I find it is the awfully goody, goody people who do the most harm. I want to back up this resolution as far as I can and I think the Government ought to put it in such a way that associations should be allowed to conduct their fairs in the best interest of their own district. (Applause.) You can prohibit any of these indecent shows. No decent people will have them—put them down; but to say that horse racing is immoral—I think the man who says so is an evil thinker. (Applause and cries of "No.")

A MEMBER: I fully indorse what the last speaker has said. I can sympathize with every word he has said, and I maintain and have maintained

ever since this question was first brought up that racing and trials of speed are one and the same thing, and I think we should have horse racing so that we can get the best out of our horses. No horse buyer will give a premium for a horse unless he is educated up to a certain degree, and I maintain that the fair ground is the place to do it. (Applause.)

A MEMBER: There is no man in the room who is more fond of horses than I am, but I ask, what is the history of horse racing? How many good men has it sent to the wall? The Government is going to be asked by this Association to repeal that law in regard to horse racing, and I say to you that you should be careful what you are doing.

The CHAIRMAN: The resolution does not indorse or repudiate the question of horse racing, it only memoralizes the Government to allow each society to decide the question. All those in favor will please stand up.

The motion was carried almost unanimously.

THE HORSE RACING SITUATION.

Supt. H. B. COWAN: I am glad that this discussion about horse racing has taken place. I have attended these meetings for years and in the past we have been afraid to grapple with this matter. It is a question that will not down until it is settled right, and if we want to settle it we must do so in a right and proper way, and before we can do that we must thoroughly understand the situation. It is one of the most troublesome questions that the Department has had to grapple with for some years, and the trouble is that the views held in regard to it are so radically different. The two sides of this question may be compared to oil and water; they will not mix. The reason is because some men have made a success of their exhibitions without horse racing. These men cannot see why other societies cannot do the same. On the other hand there are other societies that have tried to conduct their exhibitions without horse racing and have failed, but after putting on horse races they have increased their receipts and, thereby, their prizes. They are, therefore, convinced that they cannot hold a successful exhibition without horse races, and in some cases without special attractions as well. Both sides are convinced that they are right, and in the past a great deal of time has been taken up at our conventions by men who have essayed the impossible task of trying to convince those who do not agree with them, that their views on this subject are the only right ones.

We must look at this question on broader lines. When I became superintendent of fairs I must confess that I was rather prejudiced against horse racing. In the section from which I came most of the exhibitions had not held horse races and they were successful, and I did not see why all societies could not succeed in the same way. Visits paid since then to different fairs in all parts of the Province have served to convince me that there are many exhibitions that would fail were they conducted on purely agricultural lines. The acquaintance I have made with such men as Mr. Price, of Aylmer, and Mr. Field, of Brockville, has convinced me that many of the men who are in favor of holding horse races at their exhibitions are not interested in horse racing personally, but that they are honest in their views that it is necessary for the success of their exhibitions that they shall hold horse racing and special attractions at their fairs, and that they are working in the best interests of the farmers in their sections when they introduced these features at their exhibitions. The fact is that most of us, if we were con-

nected with their societies, would act as they have done in the management of their exhibitions or give up the shows altogether.

Now take the case of the Aylmer exhibition. Horse racing and special attractions, as Mr. Price has proved, have enabled the directors to greatly increase their prize list. Experience has convinced them that were they to attempt to conduct their exhibition without special attractions and horse racing it would be a failure. There is no use in trying to pass over that fact and there is no use in those who favor purely agricultural exhibitions trying to convince a man like Mr. Price, and his board of directors, that their exhibition could be conducted on purely agricultural lines.

While this is all true I am convinced that a society that finds it necessary to introduce special attractions is defective in one or more respects. Were such a society located in a strong agricultural section where the people are thoroughly interested in agriculture, where there is a good stock, and other exhibitions are not too close, it should be possible for the directors to conduct their exhibition on purely agricultural lines, as is being done by a large proportion of the societies in the Province. Where these features are introduced it is a practical admission that the agricultural element in the section is not strong enough to support an exhibition of the dimensions planned. This, however, does not get away from the fact that by putting on these special features societies sometimes are able to give more for agricultural purposes than they otherwise could.

Last fall the Department made an effort to ascertain how many of the societies in the Province are conducting horse races. A circular asking a number of questions was sent to all the societies. They were asked if they considered horse racing necessary for the success of their exhibition, and the amounts they paid in prizes. As far as I can find out, speaking from memory, we have about 160 societies out of slightly over 400 in the Province that are holding horse races. Most of the societies in northern Ontario do not hold any. The amounts offered as premiums in horse racing amounted to slightly over $26,000. A number of societies offered small purses of from $25 to $75, while on the other hand several offered prizes aggregating considerably over $1,000, one society offering as much as $2,000. The average amount offered probably would be from $150 to $200.

You have passed a resolution expressing your belief that each society should be allowed to deal with this question for itself. The danger is that if this is done circumstances over which they will have no control will gradually compel societies to go to extremes, as has been the case in the States. A society at the start may intend to give only a small sum for special attractions but as other societies increase theeir expenditures in this direction it is forced to do the same. That this is a real danger is shown by the fact that we already have societies, as I stated yesterday, that are spending more for horse races and special attractions than for all agricultural purposes combined. The proportion of such societies is likely to increase unless great care is taken.

You will see from the figures I have just given that there are between 200 and 240 societies that are not holding horse races and are conducting their shows on purely agricultural lines.

A Member: Would not a large proportion of these exhibitions be held in places where they could not pay a premium for horse races?

Mr. Cowan: As already stated, a considerable number of these societies are in New Ontario where the crowd is satisfied with a small fair on purely agricultural lines. The great proportion of them, however, are in older Ontario and have to face the same conditions as the other societies.

Right here is where I am convinced that it is the societies in the cities that are forcing this problem to the front. They, more than any others, are inclined to go to extremes in horse racing and special attractions, because a large proportion of those who attend their exhibitions are not interested in agriculture and demand that they shall be amused. Thus city societies, by introducing these features at fairs, are forcing other societies to do the same.

While the present law in regard to horse racing has not been an entire success, I am convinced that it is largely responsible for the fact that our societies, as a whole, have been doing as good work as they have. While many societies have ignored the law and have held horse races, a very large proportion have respected the law and have not introduced this feature.

There is, therefore, every reason to believe that a much larger proportion of our societies would have been holding races and that the value of the work being done by our societies as a whole would not be nearly as great as it is had it not been for this law. Even as it is the farming community is not satisfied with the work being done. You all know that during the past few

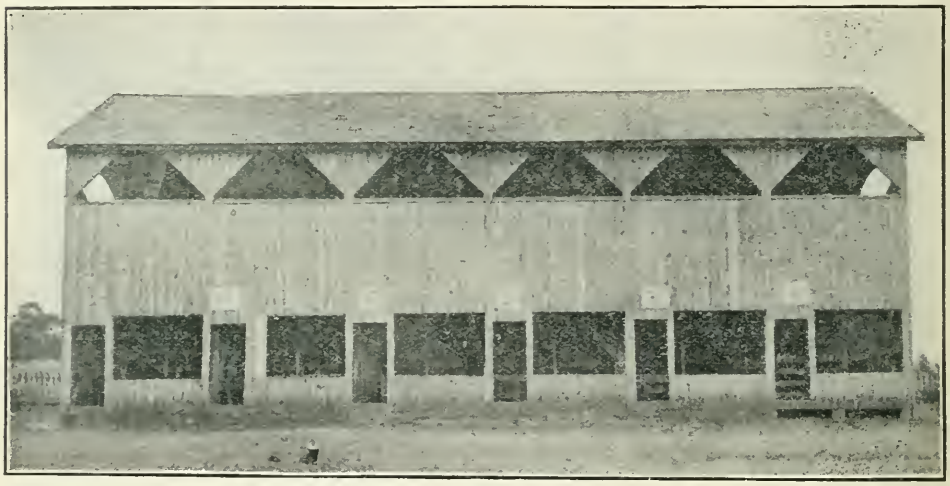
No. 8.—The swine pens and feed building of the Richmond Agricultural Society. Note how they have been improved by being white-washed. The feed building is 14x 15 ft. In it is kept the hay, grain, bran, etc , that is sold exhibitors. The open space between the buildings is used for unloading sheep, swine and calves. The society has also a movable truck for unloading animals. The swine pens are 34 in number, 5x7 ft., 17 on each side. The building is shingled, strongly constructed and cost $400.

years the agricultural press has frequently expressed the view that a large proportion of the funds expended by our agricultural societies are practically wasted, and some have gone so far as to recommend that the grant of $80,000 which the societies receive each year should be discontinued or greatly reduced. Much the same views have been expressed at representative meetings of farmers. In this connection it has been pointed out that the grant to agricultural societies is much greater than the total grant to Farmers' Institutes, to the Dairymen's and Fruit Growers' Associations, the Winter Fair at Guelph, the Fruit Experiment Stations, Dairy Schools and several other lines of work. It is believed that the societies are not doing nearly as much good with their grants as these other branches of farm work that are receiving a smaller total grant.

I have been trying for some time to find some sort of simile as regards the effect of horse racing on societies and the only thing I can liken it t

and I hope my remarks won't be misconstrued is, the effect of drinking on men. Many men drink all their lives, and show no ill effects from it, and they claim that drinking has been a benefit to them. Other men, once they start drinking, soon go to the dogs. On the whole, it is generally admitted that drinking has a more or less lowering effect on those who indulge in it. Much the same can be said in regard to the effect of horse racing on our societies. Some hold horse races for years and are able to prove that they have been benefited by them, other societies introduce this feature, run to extremes and are soon ruined. Once horse racing is introduced a certain element begins to leave the fair and another, generally an undesirable one, to attend in greater numbers. On the whole the introduction of horse racing tends to awaken the agricultural features of an exhibition, as is amply shown by the conditions of the fairs in the states.

In the great majority of cases societies start off with just a green race or a farmers' trot. After they have had this kind of a race for a while they want something a little faster and they put up a purse. Finally some fast



Some societies use the back of their grand stands for dining rooms or stock pens. The back of this, the Owen Sound grand stand, is used for sheep pens.

horses are developed, and as no other residents of the district care to compete with them the events are thrown open to the fastest horses in some other district; each year the tendency is to outdo the year before, and the purses are increased until finally the society becomes more or less of a race meet. The men who are interested in fast horses are clever men, and once they get into a society, as many of you here know, they get a grip of its affairs that it is hard to loosen and the farmers are gradually shoved to the wall. We must take great care to see that that element does not get the control of our societies.

While it may not be feasible to try to stamp out horse racing from our exhibitions entirely, I do not believe we should throw the door wide open for the unrestricted development of this feature at our exhibitions. In my opinion it is in the best interests of the horse racing men themselves that this should not be done, because there is reason to believe that if horse racing is carried to extremes the dissatisfaction now frequently expressed with

the work of the agricultural societies will grow until the public will demand the withdrawal of all Government grants, and that ultimately no grant will be given as is now the case in New Hampshire, Pennsylvania and other States.

In talking with Mr. Pearce, of Vermont, a member of the State Legislature, who is also president of an agricultural society that holds horse races, and who is endeavoring to induce his State to give grants to the agricultural societies, he informed me that one of the greatest difficulties he is meeting with is the fact that societies have gone to extremes on this line and the public will not support the Legislature in giving them grants. We should recognize this fact and take it into consideration when discussing the matter.

What is the position of the Department of Agriculture? We have many societies that are expending practically every cent they raise for agricultural purposes. We have other societies that find it necessary to spend say $1 for horse racing and special attractions out of every $3 they raise. Which of these societies is making the best use of its funds? It practically means that when the Government makes a grant to one society every cent of the grant goes for agricultural purposes, while with the other society one-third of the grant is devoted to horse racing and special attractions. Is it not right, therefore, that the Department should endeavor to support those societies which use their funds to the best advantage?

I do not say that we should cut off societies that are holding horse races, but I do feel that we should keep in front of us all the time the fact that our societies were established for the benefit of agriculture, and that we should do our best in every way to keep our societies working along the lines for which they were created, that our societies as a whole may do a still better and greater work to help the agricultural industry—the greatest industry we have. (Applause.)

A UNIFORM SYSTEM OF FAIRS BOOKS.

The president having called the meeting at the afternoon session, February 22, to order, it was moved by W. E. Stock and seconded by J. M. Knowles: "That we, the delegates present at this Fairs Association convention, think that it would be advisable for the Government to appoint a Provincial auditor of fair books." Lost.

Mr. Stock: My object in moving this resolution is, that we may discuss it and bring it to a final conclusion. I think we are beginning to know where we are at. I have had some experience in the matter of municipal audits, and you sometimes come across a set of books to audit that are very difficult, on account of the way they have been kept, and if we appoint an auditor I believe we should have some uniform system of books to be kept by the treasurer. Every municipal treasurer has a certain set of books to keep, and Mr. Laing, the auditor, can examine them very readily; and if we had all the fair books in the Province kept in the same way an auditor could go to work and audit them much more satisfactorily. I move this motion simply for the purpose of bringing this matter before the people.

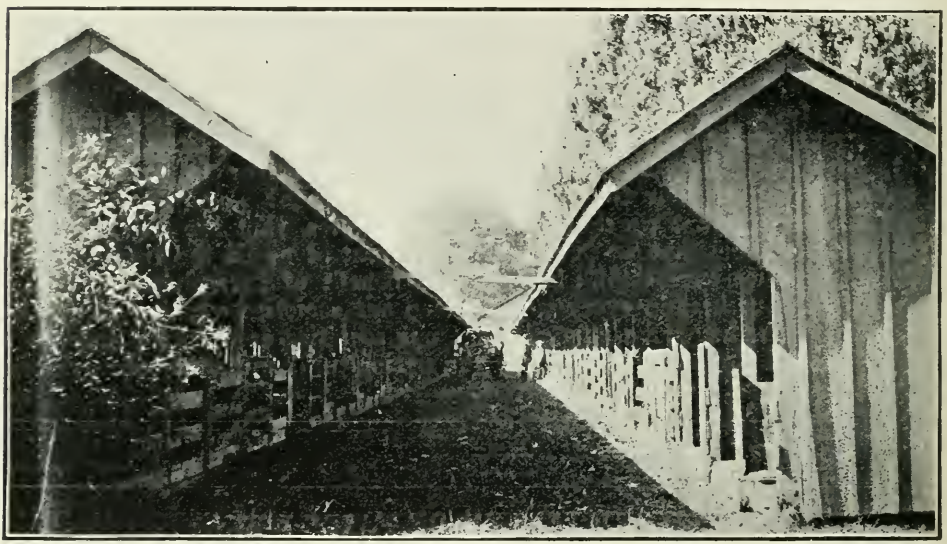
The Chairman: You are all aware of the system provided by the municipal auditors, the most important part of this motion is recommending the appointment of an auditor of fair books for the Province.

A MEMBER: Some people might approve of appointing an auditor, and not approve of having a uniform system of books. Do you think we can get one set of books that can suit everybody?

A MEMBER: Would it be compulsory that all books should be audited by the Provincial auditor?

The CHAIRMAN: Mr. Cowan explained yesterday that there were so many fairs it would be impossible for the Provincial auditor to reach them all and he would only reach those delinquent societies that were not making their reports promptly.

A MEMBER: I think there should be some better system adopted than the one we have now. The Farmers' Institutes are all furnished with a uniform set of books for the Province and the entries are all the same and I think the same plan might be carried out with regard to the fairs.



The handsome and comfortable sheep and swine sheds of the Collingwood Society. Cost not known.

A MEMBER: I think the resolution is all right, and I think if the Government takes hold of this they will give us a uniform system.

A MEMBER: I know something about bookeeping. At the present time I am treasurer of some four or five societies, including the agricultural society, and that is the only society that does not give us a book that is systemized. Every other society gives you a book prepared for placing down whatever entry you want to make and an audit can be very easily made from them. The moment we get a proper system of bookkeeping we will get the books from the Government at a nominal price, and we can send these books to the Government and they can easily look over them and see that they are right. I have one book that covers ten years, and I can turn up at any time and give day and date, and get just what I want.

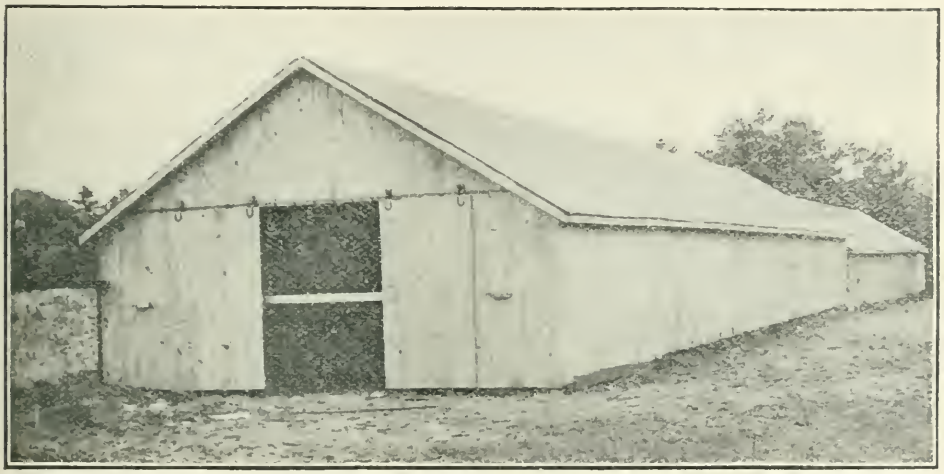
A MEMBER: You said you kept a book that lasted ten years, what did you mean by that, was it just a cash book or do you mean the ledger?

A MEMBER: In this system probably three or four years would be enough. I am not going to tell you the kind; that would be detail, that could be

arranged afterwards. We know very well that all societies, except the agricultural society, have a systemized form of bookkeeping and it works well. If you were to issue a new book yearly it would not be as satisfactory.

Mr. GAINER: I think the main point is to have the treasurers' books uniform throughout the Province. In some societies the secretary and treasurer hold separate offices, but I think the main thing is to have the treasurers' books uniform throughout the Province.

Mr. LAIDLAW: According to the Agriculture and Arts Act, Section 5, the Minister of Agriculture has power, at any time, to appoint a person to inspect and audit the books of any society, and that is all we want. We have heard that there are a few societies that do not keep their books correctly, and all that is necessary is to ask the Minister to appoint a man to audit them and he can do so. All that you want to do is to keep the cash book correctly. I always keep my books so that you can tell how much is received for entrance fees, how much for subscription, and how much for prize lists, printing, etc. I do not think there is anything very difficult



A.—Horse stable of the Woodstock Society. Size 40x136 feet, estimated cost now $1,000. A more expensive but a convenient building is one that has doors, from the outside, into each stall. See illustration B.

about the matter. Of course, I think the Government might suggest a nice handy form in which to keep the books. I do not think you could have a uniform system of entry books. This gentleman just spoke about keeping a book for four or five years. I do not think you could go on with the same old thing for four or five years. You have got to have different classes every few years. As long as you keep your entries correctly I think it is all right. I have been secretary for sixteen years, and I do not think that during any of that time there have been half a dozen inquiries after the show is over to look at the books. If the Government would issue a plain set of books, it would be all right, and we could follow them.

Mr. HYATT: As I understand the legislation, I do not feel like giving it my support.

The CHAIRMAN: To which resolution are you speaking?

Mr. HYATT: That the Government prepare a uniform set of books for agricultural societies. I presume that means for entries as well as for every-

thing else. I think that part of it should be left to the societies or the secretary to deal with just as he sees fit. A book prepared something similar to the cash book of the township municipalities might be all right for the treasurer. In a great many cases the secretary and treasurer is one and the same man. You will all agree with me, that we should try to learn everything in the quickest and simplest way possible; because the remuneration we get is so small that we cannot afford to spend very much time on it. My book is very simple, and I think any man can follow it. I simply take an old book I have used for years, a journal, and I take the form that is sent us by the Government for reports and in that form there is a column for the amount paid for live stock, the amount paid for rent and fitting up buildings and grounds, and I give a heading for that. Another page I use for expenditure of interest and insurance, and whatever I pay out I simply charge that money up under the heading to which it belongs. I use the same heading in my book that I have to use in the annual report and when I want to make up my annual report, all I have to do is to hunt out my vouchers, add up the amount I have paid out, and set it down on my report.

B.—Horse sheds of the Barrie Society. Cost not known. These are an improvement on sheds like those shown in illustration A, as the horses can be taken out of each stall without having to be led past each other.

A Member: It seems to me that in dealing with this question, that the directors should see that the annual report is made out in proper time and sent to the authorities, and if that was done there would be no query from the Government about delinquent secretaries. It seems to me that the responsibility rests directly upon the directors, that the document should be made out and be sent at the time of the annual meeting. The Government gives thirty days to do it in, but it should be done at once, and if that was done there would be no opportunity for the secretary to mix figures. I would not interfere with one item on my cash book for any member of my board.

Mr. Knowles: The resolution only refers to the cash book.

Mr. Sproule: The last gentleman spoke of having a certain page for a certain department. Don't you think it would simplify the thing much better to rule off a column for each department at the right hand side of your cash book and then make your entries one after the other and at the end of the year you would have them all together. It seems to me that that would simplify the matter very much.

The Chairman: I will read the resolution:

"That the Department of Agriculture be requested by this Association to have published a set of account books for the use of agriculture societies in this Province, and that the Department enforce their use by all societies drawing a Government grant." The motion was put to the meeting and lost.

Mr. Stock: If we have a municipal auditor we should have a set of books or the auditor cannot audit.

Mr. Gough: We appoint the best auditor we can get, and we always find our books come out to a cent, and the report is submitted to the annual meeting, and they are again audited. (Applause.)

The resolution was amended as follows, and put to the meeting: "That we, the delegates present at this Fairs Association, think it would be advisable for the Government to appoint a Provincial auditor of fair books in the Province." Lost.

Moved by James D. Smith, seconded by George Yearby: "That in the opinion of this meeting that all agricultural societies shall pay a capitation tax of one dollar yearly to the Fairs and Exhibitions Association for the purpose of meeting the necessary expenses of said Association. The same to be paid whether the societies send delegates or not.

A Member: Is that an extra dollar or the dollar the delegate pays now?

The Chairman: How are we going to collect this capitation tax?

Mr. Wallace: There are four hundred societies. Why would you require so much money?

A Member: There has been no difficulty in collecting the fee.

A Member: I think this should be left to the judgment of each individual society, and not make it compulsory. Motion lost.

AUDITORS' REPORT.

We hereby certify that we have examined the treasurer's books and find the receipts from members to be $122. Interest on bank account 70 cents. Total $122.70. Disbursements, balance from last year due treasurer, $2.87. Accounts paid $109.62. Balance on hand $10.21.

W. Hughes Charles,
J. E. Hudspeth,
Auditors.

Moved by Mr. Pearson, seconded by Mr. Davidson: "That the auditors' report as read be adopted." Carried.

GENERAL BUSINESS.

Col. Sanders: You have decided by resolution that you would memorialize the Government that horse racing should be permitted at fairs. Now I take it that that is not the most important feature that the new agriculture and arts act may happen to cover. Many of us are here and we expect to carry something home with regard to the new Act, but I am also aware that we cannot get that information, but as you have memorialized the Government regarding one important feature I think there is another important feature that we should pass a resolution on, and that is the division

of the Government grant among these societies. I am told that some statement was made with reference to it last evening by Mr. Cowan. We all recognize that the Act would not be changed in that direction unless the division of the Government grant had been manifestly unfair. I think you agree with me that the division of the money has been heretofore unfair for the reason that it was decided upon many, many years ago, I believe fifty or sixty years ago, and there have been but very slight alterations since that time, although conditions have changed very much. I think it is important for us to know whether the struggling township shows are going to be guaranteed that share of the grant that they are entitled to. Therefore I move that accompanying the memorial regarding horse racing a memorial should be presented to the Minister of Agriculture asking him to consider the question of the Government grant and to see that the division is made upon a more equitable basis.

A MEMBER: I have much pleasure in seconding that resolution. We have often lost sight of the actual amount expended in connection with that Department, and we should get back to the first principle that the Govern-

Horse stable of the County of Russell Agricultural Society. It contains five large box stalls and 16 single stalls and cost about $500.

ment grant should be in proportion to the advantages that are offered. I have much pleasure in seconding Col. Sander's resolution, because I believe we are now in a position to get fair play.

The CHAIRMAN: The principles named in the resolution were passed by this Association last year, practically unanimously, and it seems to me like child's play to introduce the resolution again this time when the Government are proceeding upon the basis of the resolution we passed last year. The new Act is being based upon that resolution and the conclusions that were arrived at by this Association last year, and I think it is entirely unnecessary to introduce that resolution again this year.

Moved by D. Hughes Charles, seconded by James Mitchell: "That the best thanks of this convention be conveyed to the mayor and corporation of the City of Toronto for the use of the rooms of the city hall, and that the sum of five dollars be paid the janitor of this hall for the trouble he has in connection with the convention." Carried.

The CHAIRMAN: We will proceed to discuss the duties of officers of agricultural societies.

Mr. Price: In order that Col. Sanders and other gentlemen here may not be aggrieved over this matter, and in order to settle all disputes and make them feel happy with regard to this resolution, Mr. James, the Deputy Minister of Agriculture, is here in the hall, and I think he can in a few words make matters plain.

Mr. C. C. James, Deputy Minister of Agriculture: While I am not in a position to disclose anything that may be of a confidential nature, I may simply say that we are, as far as possible, following out the wishes of this convention and I think you will be fairly well satisfied when the proper time comes for disclosing the conditions of the Act. You will through the public press receive the details sufficiently full to indicate to you the exact lines along which the Government intend to move, but I will say in general terms that the wishes of this Association are being followed as closely as it is possible to follow them. (Applause.)

A partial view of the buildings on the South Renfrew Fair Grounds. The buildings here shown were erected in 1903-4 and 5. The large building in the right foreground is a horse shed 32x90 ft. It cost some $600. In the background, the building with diamond-shaped windows, is a cattle shed. It is 30x60 feet, with a 5 ft. passage down the middle for spectators, and 10 low stalls on each side, each 6 ft. wide. The building is of rough boards, battened and whitewashed. It cost a little less than $450. The next two buildings to the left are the swine and sheep pens, duplicates, 22x60 ft. with a 6 ft. passage for spectators. The pens are 6x8 ft. planed lumber, XXX shingle roof; two coats paint. The swine pens have a heavy plank floor. Cost, sheep pen, $329; swine pens, $378. In the left foreground are two new horse sheds, duplicates, 32x63 ft., planed lumber; 8 ft. walls; corrugated iron roof, stalls 9x13 ft., with partitions 8 ft. high between them; a 6 ft. passage with 3 ft. barrier of lumber and heavy wire netting nailed above that. The doors are cut into upper and lower sections. Each stall is fitted with harness hooks. Two coats of paint. These cost about $500 each. All these buildings are fitted with electric lights at a total cost of less than $50. The water trough, fed from the town waterworks, stands between the sheds. Buildings of this kind are excellent as they afford protection to the spectators as well as to the stock.

Q.—Is a small city a suitable place to hold a fair? A.—Yes.

Q.—Should side shows at exhibitions be permitted? A.—No.

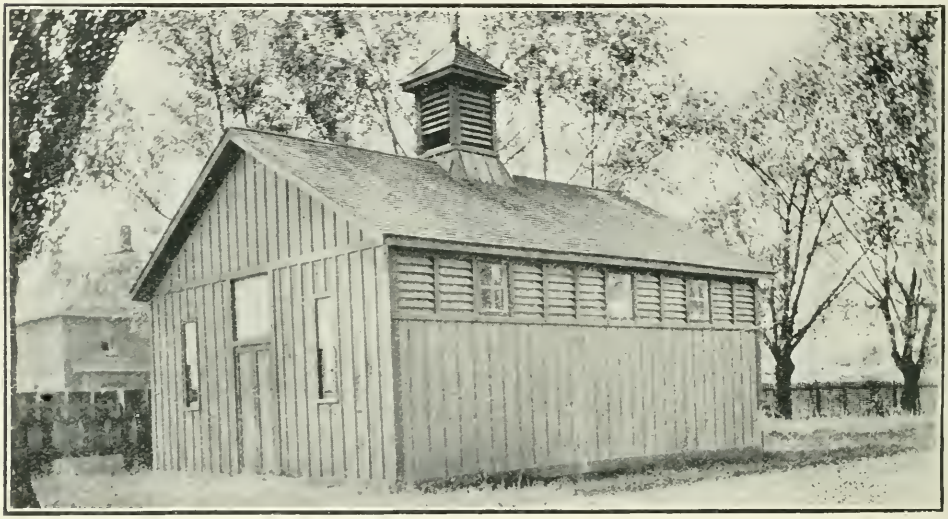
J. M. McCallum: During the past two years I have been permitted to have considerable experience in travelling around the different parts of the Province, in the capacity of an expert judge, and I have occasion to meet some of those objectionable features such as immoral or lewd side shows. The Act as I understand it forbids them. Still they are held year after year, and those of us who have wives and sisters who visit these local county exhibitions have put up before us these immoral exhibitions year after year and I think it should not be allowed, and I have a resolution which I wish to move. Moved by J. M. McCallum, South Easthope and East Zorra Society, seconded by Henry Kelly, Wellesley: "That this convention, realizing the

importance of our exhibitions being kept as free from objectionable features as possible, would respectfully petition the Minister of Agriculture to take such steps as he may deem wise to prevent the introduction at agricultural exhibitions of side shows of an immoral or debasing nature."

The CHAIRMAN: You have heard the resolution, are you ready for the question?

A MEMBER: The Minister of Agriculture is quite competent to frame a law to prohibit things of that kind.

Another MEMBER: I am quite free to confess that I am in perfect sympathy with everything that would destroy shows of an immoral character and to prevent them from exhibiting upon any agricultural show ground in this Province, but I wish to say that it seems to me that it is a matter for the criminal law of this country. A great deal depends upon the directors of the societies, if they allow these things. All they have to do is to put an officer upon the grounds and show them out and away they go and



Poultry shed of the Collingwood Society. Cost price not known.

it seems to me we have the machinery to prevent anything of that kind from appearing at agricultural shows, and why should we ask the Minister to give us a law which we already have in our hands.

A MEMBER: I think that resolution that was moved this morning concerning horse racing and attractions at fairs covers the ground.

The CHAIRMAN: The gentleman is quite within the rules of the order paper in bringing the resolution forward. The order paper says "Should side shows at exhibitions be permitted?" and I think the resolution is in order.

The motion was carried unanimously.

COL. SANDERS: We have lost nearly half of the afternoon by the election of officers, and I think there is a weakness in our constitution. This body is getting very large and practically unwieldy, and I think if you would allow a resolution to be submitted to amend the constitution so as to have a nominating committee appointed, and to let that nominating committee bring in their report, we would save more than half the afternoon,

and I therefore move that the constitution be amended in that direction, and that a nominating committee be appointed at each convention to report.

Mr. Walter Sapp, Uxbridge: In seconding that motion I feel that it is a necessity, and I hope this convention will feel the same way. As the mover has pointed out the afternoon has been lost by the present method of electing officers, and a great number have not had a privilege of voting.

The Chairman: The resolution is a notice of motion for our next annual meeting to be considered in the early part of the meeting and carried out at that time.

A Member: There will have to be a new provision made by the Government for the organization of new societies, and I hope it will not be overlooked.

Dr. McGuire: In regard to the election of officers, I was just thinking over a plan that is used in our dental societies. We divided the association into subdistricts, and prior to the annual meeting, blank ballots are sent out, and each dentist in the district has a vote for so many men to be elected from that district and I think that if we divide this Association into subdistricts and each society is sent a blank ballot and they are allowed to elect two men from each subdistrict on the board of directors, they could send in their ballots filled out, accompanied with the membership fee, and any ballot that was sent in unaccompanied by the dollar would not be recognized, or the delegate could bring the ballots and the membership fee so that we could do away with all the time we have lost this afternoon in electing a board of directors. We could also send out ballots for the other officers, president, vice-president and so forth and they might be chosen from any district and they would have a chance to vote for the presiding officer. I think that that would simplify that matter a great deal and there would be no pulling and hauling between the east and west or the north and the south. Each district would have two representatives.

A Member: I do not think that that would be practical. People from a distance do not know each other, and by coming here they see one another and know who to elect. That proposition of having a nominating committee was tried in this Association once before and found to be unsatisfactory, and they changed back to the election of officers by the people assembled.

Mr. Lee: I think that if I am a delegate to this convention I will pass no resolution that is brought down to elect officers by any set number of men. I believe the people should elect their own officers. If you elect them by a committee you will run it into cliques.

As a great many of the members were very anxious to get away on the afternoon train, and the railway agent having appeared to validate the tickets, the meeting was brought to an abrupt close.

THE LAWS GOVERNING THE AGRICULTURAL SOCIETIES IN THE NEW ENGLAND AND CENTRAL MIDDLE STATES OF THE UNION.

As a result of the trip taken through the New England States, and the States of New York, Pennsylvania and Ohio during February, 1906, I found that the laws in force in these States governing the work of agricultural societies differ widely.

All of the States which grant aid to their societies have laws prohibiting the sale of liquor or the conducting of games of chance and other fea-

tures of that nature on the exhibition grounds at the time of the exhibition of any agricultural society. Pool selling, also, is prohibited in each of the States, although in Connecticut and Ohio, where the horse racing element has considerable power, the State legislatures have been petitioned to legalize pool selling at agricultural exhibitions. These petitions in each case have been refused. In none of the States is there any regulation to control horse racing at the exhibitions of the societies. In some of the States the societies are allowed to include the moneys expended for horse racing as though they had been expended in the same manner as the other premiums usually awarded at agricultural exhibitions and their Government grants are awarded on this basis.

In three of the States, Vermont, New Hampshire, and Pennsylvania no State aid is given to the societies. There are a number of agricultural societies mostly managed by private individuals through joint stock companies,

Horse shed of the Collingwood Society. Cost not known. Note what an improvement the trees are.

for their own private benefit. Some of these societies have done valuable work for the improvement of agricultural conditions in their sections.

In Vermont there were fourteen of these societies, in New Hampshire twenty-five and in Pennsylvania fifty. Many of these societies are devoted largely to horse racing, while some give considerable prominence to special attractions. Others are conducted largely on agricultural lines and are doing excellent work.

In the New England States the societies in Maine probably are doing the best work. Various reasons may be assigned for this. Maine is still essentially an agricultural State. The laws in force in Maine governing the societies are the best in force in any of the New England States. One of the strongest features of this Act is that the Government grant is distributed among the societies in proportion to the amount of money the societies expend for agricultural purposes. A clause in the Act relating to this, and also the amount of the grant reads as follows: "There shall be appropriated only from the State treasury a sum of money not exceeding one

cent and a quarter to each inhabitant of the State, which shall be divided among the legally incorporated agricultural societies of the State not provided for by special enactment according to the amount of premiums and gratuities, actually paid in full by said society, provided, that the stipend shall be based entirely upon the premiums and gratuities actually paid in full on exhibition stock and products, and provided that no society shall receive from the State a sum greater than that actually raised and paid by the society for said purposes; provided also, that each of the said societies shall cause the prohibitory liquor law to be enforced on all grounds over which they have control, and not allow gambling in any form or games of chance on said grounds."

The population of Maine is such that the annual grant in 1905 amounted to $16,180, of which only $8,680.82 was distributed among the smaller fairs in the State, the remainder being given to the State Pomological Society and three large exhibitions, the Maine State, Central Maine, and Eastern Maine exhibitions. There are forty-four local and county societies in the State, the average grant being about $200.

A row of 40 open front cattle stalls on the grounds of the Richmond Society. Size of each stall 8x10 ft. The society has another building that contains 40 more cattle stalls. The two are valued at $1,000.

A clause in the Maine laws not found in those of any of the other States visited reads as follows: "No State stipend shall be paid to any agricultural society offering or paying premiums on grade males; the commissioner of agriculture may make this a part of the sworn return to be made by the proper officers of all agricultural societies; provided that evidence as to the eligibility to registration be accepted as satisfactory proof of purity of blood."

Still another clause of interest relates to the use of score cards at the State exhibitions and reads as follows: "The payment of the State stipend of the Eastern Maine State Fair and Maine Agricultural Society shall be conditional upon the use of the score card system in the judging of all horses, breeds of cattle, sheep and swine, and of dairy products; the cards to be used for pure broods to be adopted by the several breeders' associations. A copy of each score card as filled by the judge shall be delivered

to the exhibitor of each individual animal judged. All county societies receiving a three hundred dollar stipend or more, shall be required to faithfully observe the same system and conditions."

Another clause in the Act that is of interest reads as follows: "Every society receiving the bounty of the State shall expend an equal amount each year in premiums and gratuities for the improvement and encouragement of agriculture, horticulture or the mechanic arts, unless the commissioner of agriculture directs for what purpose a sum not exceeding half of such bounty shall be expended; and then it shall be expended accordingly.

"Every society applying for the bounty of the State shall require of all competitiors for premiums either on animals, crops, dairy products, or improvements of soils or manures, a full and accurate statement of the process or method of rearing, managing, producing and accomplishing the same, together with its cost and value, with a view of showing the profits or benefits derived or expected therefrom; and the application for bounty shall embrace all the specifications included in the following form to it."

A neat set of buildings, on the grounds of the Brockville Society, used for the exhibits of horses and cattle.

In regard to the latter clause I was informed that it has been difficult to enforce it and that no attempt is made to require exhibitors to furnish such statements as mentioned in the clause.

The Massachusetts Law.

The law in Massachusetts is a very old one, having been first enacted about the year 1818 and revised many times since. Few changes have been made in it since 1882. In this State the societies have been decreasing in importance for many years, owing, largely, to the great increase in urban population. There is a general impression that the Act is a poor one, and that it needs a thorough revision. In brief the principal clause of the Act provides that every incorporated agricultural society that has raised by contribution of individuals and put out at interest on public or private security, or invested in real estate, buildings and appurtenances for its use and accommodation, one thousand dollars, as a capital appropriated for its uses, shall,

except when otherwise determined by the State board of agriculture, be entitled to receive in the month of October annually $200, and in that proportion for any greater sum so contributed and put at interest or invested; but no society shall receive a larger sum in one year than it has awarded and paid in premiums during the year last preceding nor more than $600."

There are two serious defects in this law. One is that while it stipulates that every society shall have certain assets it does not pay any attention to the liabilities of the societies, which in the case of some of the societies in the State greatly exceed the assets. The second defect is that the grant is not based in proportion to the amount expended by the societies for agricultural purposes. The result is that a society expending $6,000 for agricultural purposes receives no larger grant than a society expending $600 or even less. Many of the societies in this State are largely horse trots. The dates for their exhibitions are arranged so that it will be possible for the fastest horses in the country to compete for purses, and pool selling is common at many exhibitions, although the State police have been trying to suppress this.

The manner in which the societies in this State have been decreasing in importance is shown by the returns made to the State board of agriculture. In 1891 there were 37 societies in the State drawing a State grant of $20,802, the membership of all the societies being 31,747. In 1905 the number of societies had decreased to 29 and the State grant to $17,400 and the membership to 26,308.

Connecticut.

Although the law under which the societies in Connecticut operate is better than that in force in Massachusetts, the societies in this State are not doing much better work. As in Massachusetts, the great increase in the urban population is one of the reasons for the lack of interest shown in the societies of the State as a whole.

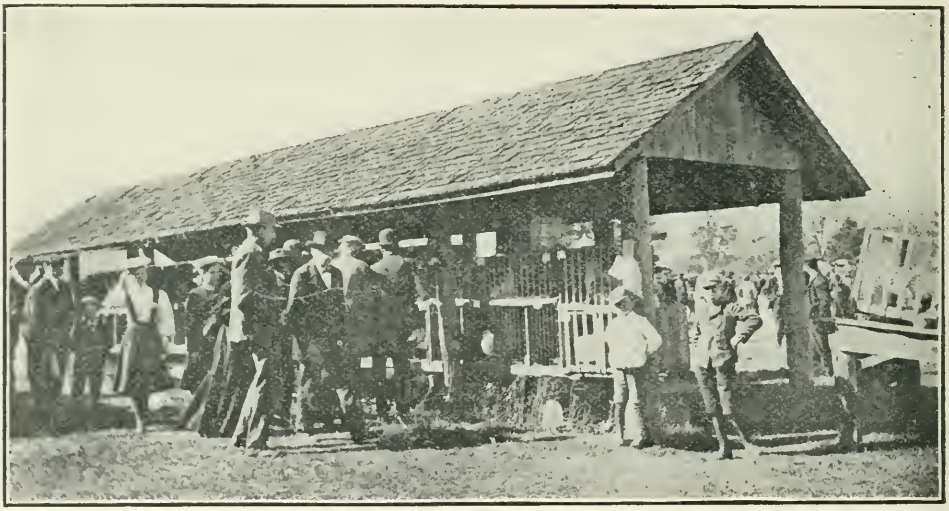
The principal clauses in the Connecticut Act reads as follows:

"There shall be annually paid to the incorporated agricultural societies of this State the sum of $4,500 to be distributed among said societies as follows: Each society which shall in any year raise the sum of $100, and shall pay that amount in premiums for horse racing, trials of speed, or any recreation or amusement, shall receive $100 from said appropriation. The balance of said appropriation shall be divided among all said societies in proportion to the amount of premiums and gratuities exceeding $100, actually paid in cash to exhibitors at their respective annual fairs, holden within twelve months previous to such distribution, not including purses or premiums for horse racing, trials of speed, or any recreation or amusement; provided, however, that no portion of said sum of $4,500 shall be paid to any society which during the four years preceding has declared or paid any dividends to its stockholders or members."

As in Massachusetts and Maine, the horse racing element has a very strong hold in connection with the annual exhibitions of the societies. The returns made by societies for 1904 show that the 29 agricultural societies in the State expended $20,599 for all agricultural purposes combined, $19,876 for horse racing and $10,376 for special attractions, or $9,652 more for horse racing and special attractions than for all agricultural purposes combined. During 1904, 29 societies held exhibitions, their average grant being about $150. Immoral features have become so common at some of these exhibitions that an earnest attempt has been made to stamp out these

features from the exhibitions, but not with very great success. A bill having this object was passed recently and is quoted in full in my annual report. Another clause in the Act governing the societies requires the president and the secretary and treasurer of each society to make oath, in their annual statement each year to the secretary of the State Board of Agriculture, that the provisions of the law pertaining to the operating of games of chance, to the performance of immoral side shows, or the sale of spirituous liquors have not been violated.

Some of the societies that attempted to rid their exhibitions of these undesirable features have found it necessary to engage minstrel shows of an unobjectionable nature, at their own expense, to amuse the crowd, and in part take the place of the midway. An agitation has been in progress of late years to have the State police attend the fairs to suppress objectionable practices, as it has been found at many exhibitions that the local police are of but little value.



A shed used by the Otterville Society to protect its poultry exhibits. Size 50x6 ft.; cost $100.

Several prominent gentlemen connected with agricultural societies informed me that only about half the societies in the State made agriculture their main object, and even at that few if any are purely agricultural. Some of these gentlemen believed, however, that on the whole the societies are doing more good than harm, although they admitted that it is a debatable point.

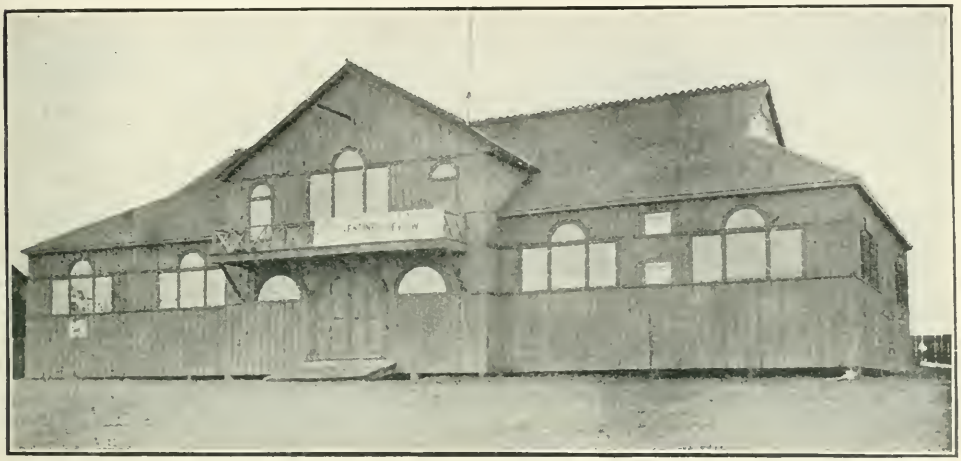
New York.

In many respects the conditions in New York State are more than in any other State like those that have prevailed in Ontario. This is because it is the only State that has made any distinction between district and township societies and by giving larger grants to the former than to the latter.

In 1841 a bill was passed by which a grant was made to county societies. In this bill, fixed sums were given to the organized county societies. Later this was amended several times until it was finally made possible for township societies, in counties where there were no county societies, to share

in the grant. In 1895 the law was further amended so that township societies were given 25 per cent. of the total grant and the remainder, or 75 per cent., to the county societies. Between 1896 and 1901 the bill was again amended so that the share apportioned to the township societies was increased to 30 per cent.

Dissatisfaction was still felt with this method of apportionment. It was found that some of the smaller societies were getting larger grants than they paid out in premiums for agricultural purposes. Finally, in 1901 all the societies in the State were placed on the same basis, and it was arranged that the grants should be distributed among the societies in proportion to the amounts they paid out for agricultural purposes. No society is allowed to draw an amount in excess of the premiums it has paid out for agricultural purposes, nor a larger total grant than $4,000. The distribution among the societies is made in proportion to the total amount they expend for agricultural premiums.



Main building of the Woodstock Society. Size 50x100 ft., erected in 1891 at a cost of $1,600. Were the society to build one now it would erect two smaller ones instead of one large one.

In part, the law, as finally passed, reads as follows: "All of the monies already appropriated or hereafter appropriated for the promotion of agriculture in any one year, shall constitute a fund which shall be disbursed on behalf of the State, and shall be apportioned and distributed as hereafter described among the various county societies, the American Institute of the City of New York, and among the other various township or other agricultural exhibitions or agricultural clubs which have received monies from the State. Such apportionment and distribution shall be made in the following manner. There shall be apportioned and distributed to such societies in proportion to the actual premiums paid during the previous year, exclusive of the premiums paid for trials and tests of speed, skill and endurance of man or beast. Any such society which shall fail or neglect to hold annual fairs and file their annual reports as provided by this Act, for two consecutive years, shall forfeit all their charteerd rights, including the privileges or moneys they may hereafter otherwise be entitled to under the provisions of this Act."

The clause relating to undesirable features reads as follows: "Any society which shall knowingly permit any immoral, lewd, obscene or inde-

cent show or exhibition, use or knowingly permit the use of any mechanical device, instrument, contrivance, in the operation of which bets are made or wagers laid, wheel of fortune, or the planning or carrying on of any game of chance, upon the grounds, shall by it forfeit its rights to any moneys it might be entitled to receive under the provisions of this Act." The president and secretary or treasurer of each society are required to file a certificate with the Department that these features were not permitted at their fair. The Department of Agriculture reports that since the change in the Act by which the giving of fixed grants to societies was discontinued, and since they have received their grants in proportion to their expenditures for agricultural purposes, there has been a great improvement in the work of the societies, and that the expenditures for agricultural purposes have shown a marked increase.

The funds that are distributed among the societies are obtained in a rather unusual manner. They are secured by means of a special Act which

Main Hall of the Peterboro' Society. Cost about $1,600. Note the numerous windows and ventilators.

imposes a tax of 5 per cent. upon the gross amount of receipts of all racing associations, incorporated under the laws of the State, whether for the improvement of the thoroughbred or the trotting horse.

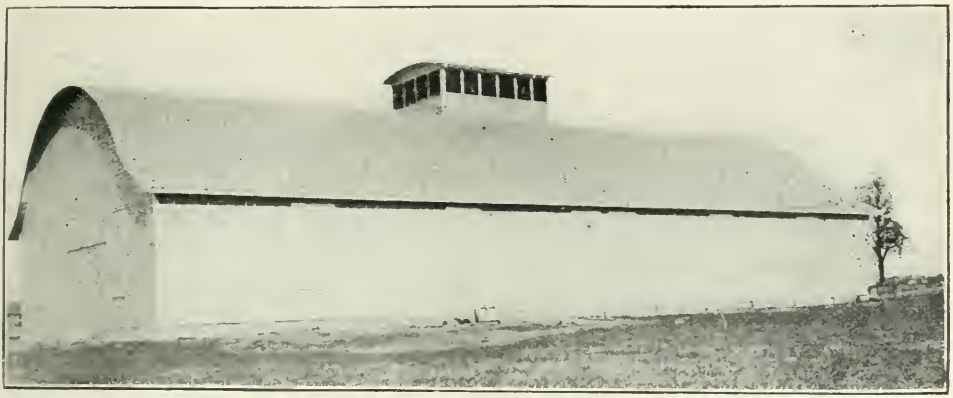
In 1904 the money raised in this way was so large that the Department was able to pay all the societies practically an equal amount to what they had paid out in premiums for agricultural purposes, including such societies as were entitled to the maximum grant of $4,000. That year the societies in the State practically received $1 from the Department for every dollar they expended for agriculture. In addition $57,000 of a surplus was left.

In 1902 the funds available were $164,000; in 1903, $184,000; and in 1904, $231,000. There are some 61 counties in the State and 93 societies. In 1904 the amount paid in premiums was $296,000 and in 1905 $308,000. Although the societies are much larger than the average society in Ontario there is a general impression in the State that there are too many societies. It is generally admitted that societies in the State are a great benefit to the agricultural interests.

Ohio.

In Ohio the agricultural interests of the State are looked after by the State Board of Agriculture. Each year each county agricultural society in the State elects a representative to attend the annual meeting of the board of agriculture. At this meeting the delegates elect two members of the State board, whose term of office is five years and until their successors are elected. The State board consists of ten members who employ a secretary and other assistants who give their whole time to the work of the board. In this way the agricultural societies of the State play an important part in the management of all work undertaken by the State for the improvement of agricultural conditions.

While there are a large number of societies in the State, the only ones entitled to a grant are the county societies. There is a county society in every county. In cases where the site for holding the county fair is situated so far from the geographical centre of the county that in the opinion



A well lighted, well ventilated main hall built in 1905 by the Russell County Agricultural Society. Size 50x100 ft.; cost $2,500. Notice the strong shutters on the windows.

of the commissioners of the county it is in the interests of agriculture to establish another, an additional society is formed.

The grants to the societies are raised in a rather peculiar manner. Each year the society makes a report to the State Board of Agriculture, and upon this report being adopted the county auditor is required to draw an order on the treasurer of the county in favor of the society for a sum equal to two cents for each inhabitant of the county, upon the basis of the last previous national census. It is stipulated that the total amount of the grant in any county shall not exceed the sum of $800. It will be noticed that by this method no account is taken of the value of the work being done by the different societies.

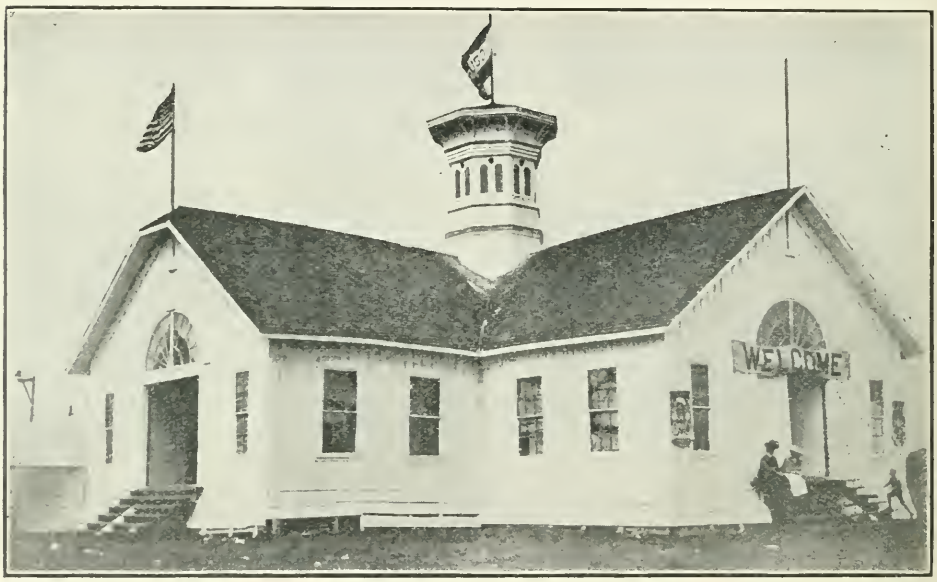
Each society is required to publish annually a list of the awards and an abstract of the treasurer's account in a newspaper in the district, and to make an annual report to the State Board of Agriculture.

In the rules for the management of the societies it is stipulated that the board of directors for each society shall consist of not less than ten members and not more than one member from a township, except in a township in which a fair is held, where two members may be elected. In townships

having a city or town of a population exceeding 7,000, an additional member may be elected. The tenure of office of the directors has to be so arranged that the terms of from one-fifth to one-half of the members shall expire annually, and the terms of office shall be not less than two or more than five years. A portion of the officers are elected annually.

Last year there were 69 county societies. In addition to the county societies there is the State fair, which receives no regular annual grant from the State. This fair has from time to time received large special grants for the equipment of the grounds and buildings. In twenty years it has received about $330.000 from the State.

Owing to the fact that the laws relating to the societies receiving State aid prevent the operation of games of chance and the sale of liquor on the exhibition grounds, some societies have cut away from the State that they may escape the provisions of the State regulations. Many societies permit the sale of beer on their grounds and receive money from the sale of the pri-



Main Hall of the Morrisburg Society. Cost $800.00. Note how the painting has improved it and that the doors are large enough to let the crowd in and out without congestion.

vileges. The secretary of the State Board of Agriculture informed me that he believed the societies in the State, as a whole, were doing excellent work for the improvement of agriculture, but confessed that they have some "pretty hot fairs."

There is no provision to restrict horse racing at the exhibitions, and the result has been that practically all the societies in the State conduct horse races on a more or less extensive scale. Several attempts have been made to have pool selling legalized.

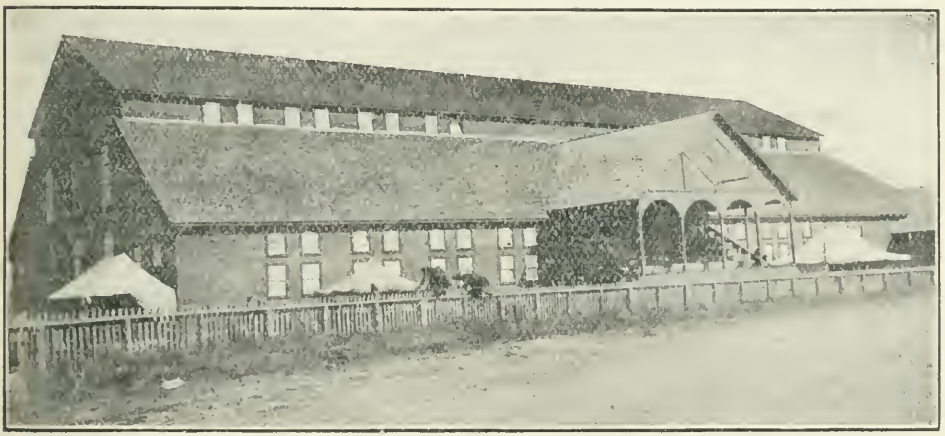
Last year the 69 societies expended $212,642.19 in premiums, of this amount $107,627.61 was spent for horse racing. This leaves a balance of $105,014.58 that was expended for all agricultural purposes combined, including all classes of live stock, machinery, manufactures, farm products, fruit, flowers, household products, fine arts and merchandise. In other

words $2,613.03 more was spent for horse racing than for all agricultural purposes combined. These figures do not include money expended for special attractions. Many of the societies go in for special attractions on an extensive scale.

The returns made by the societies to the Department show that in 1904 they realized $60,765.94 from booth rents and privilege permits. This is equal to an average of slightly over $880 a society. This will give some idea of how extensively the midway features are connected with the exhibitions of the State. Most of the societies in the State receive the maximum grant of $800 a year. A few, in counties where the population is small, do not draw quite that grant. The farmers of the State take an interest that is more or less keen (depending on the locality) in their agricultural exhibitions.

THE ILLUSTRATION FAIRS AT BEACHBURG AND SIMCOE.

Once the agricultural societies of Ontario cease to receive fixed grants, irrespective of the work they are doing, and their grants are apportioned among them in proportion to the amount they expend each year for agricul-



Main Hall of the Barrie Society. Size 175x72 ft., cost 10 years ago $3,500, but could not be built now for less than $5,000 to $6,000. It has given fair satisfaction.

tural purposes, a great change will take place in the character of the exhibitions held in the Province. Many of the smaller societies, that have been receiving grants that have been out of all proportion to the value of the work they have been doing, will gradually die, while the grants to societies that have been doing specially good work, and which have not been receiving grants in proportion, will be increased. This will tend to a material reduction in the number of exhibitions held each year, and to the strengthening and encouraging of the best societies.

It is admitted that our agricultural societies should be of much greater educational value than they are. Their aim should be to encourage the production of the most profitable varieties of live stock and farm products, and their prize lists should be arranged accordingly. Wherever possible demonstrations should be given at the exhibitions to show the public the type of animals and the kind of produce that the markets are demanding.

and the best methods of preparing these for market. To conduct this work successfully it is necessary that the Dominion and Ontario Departments of Agriculture the Agricultural Colleges, and the Experimental Stations should co-operate and work with the agricultural societies in every way possible.

With fewer but larger exhibitions, and these exhibitions receiving larger government grants, the societies will be able to increase their prize lists, offer larger prizes improve their grounds and buildings and to introduce many educational features that hitherto have been impracticable.

Believing that the time is coming when it will be possible to arrange exhibitions in circuits, so that the various educational institutions of the Province and the Dominion Department of Agriculture will be able to co-operate more with the societies by preparing special educational exhibits and sending them around from one exhibition to another, the Ontario Department of Agriculture last fall arranged to hold two illustration fairs. The object of these fairs was to show how the various educational institutions and the societies can thus co-operate, and to show how the various departments of our exhibitions can be made of greater educational value.

The societies selected as the demonstration fairs were the North Renfrew society, the exhibition of which was held at Beachburg on October 5th and 6th, and the Norfolk Union Society, whose exhibition was held at Simcoe, October 17th, 18th and 19th. These are two of the best purely agricultural societies in the Province. Both have splendid grounds and buildings practically free from debt. The other agricultural societies in the Province were notified and invited to send delegates to these exhibitions. Meetings were held during the course of the exhibitions to afford the delegates an opportunity to discuss the various special features. The main features at each exhibition were identical, although there were some exhibits at each that were not at the other.

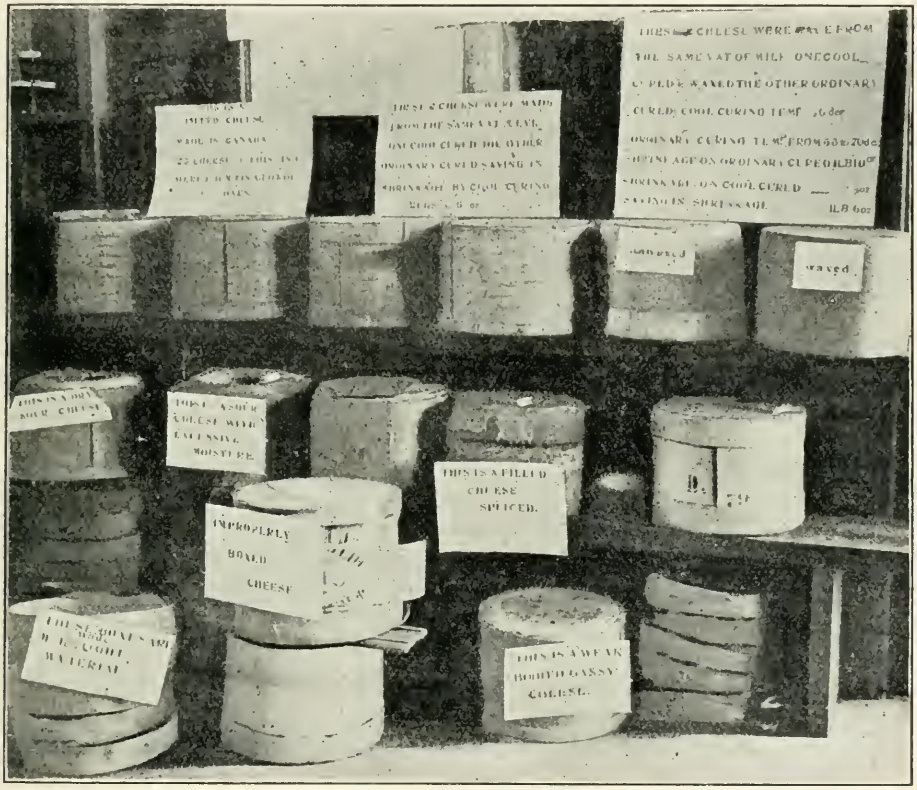
Educational Exhibits.

The following special features were introduced at each exhibition. Through the kindness of the Dominion Department of Agriculture, which co-operated with the Ontario Department of Agriculture in this work, special exhibits were made in the poultry, fruit, seed and dairy sections.

In the poultry department the Dominion Poultry Division made an exhibit of desirable and undesirable types of birds for fattening purposes, fattening crates, shaping frames, and boxes for the shipment of dressed poultry. There was a model poultry house and brooder, and an exhibit of a trap net, which showed how it is possible to ascertain which birds are the most valuable from an egg producing standpoint. In this connection there was a special exhibit of two hens, one of which had laid over 200 eggs in the course of a year while the other had laid only six. Both hens were identically the same as regards size, plumage and color of their combs. There was, also a nexhibit of eggs showing how they should be graded according to size and color, so as to realize the highest market price. A plentiful supply of bulletins was on hand for the benefit of those sight-seers who might desire information in greater detail. The exhibit was in charge of Mr. F. C. Elford, Chief of the Poultry Division, who was present at all times to give information in regard to poultry.

A splendid exhibit of dairy products was in charge of Mr. N. G. Somerville, of the Government Cool Curing Room, Brockville. It consisted of cheese that had been properly cured and cheese that had been improperly cured. This exhibit showed the increased value of properly cured cheese.

There were exhibits also exemplifying the chief defects in cheese, including acidity and open and sour cheese, an exhibit of boxes showing properly and improperly packed cheese, including broken packages that had been injured owing to the flimsy material of which they had been constructed. Two packages of filled cheese attracted a great deal of attention. Charts on the walls showed the difference in value of properly and improperly cured cheese and gave other information of interest. This exhibit was the centre at all times for the dairymen.



One of the best educational exhibits at the Beachburg Illustration Fair, arranged at the request of the Ontario Department of Agriculture, by the Dominion Dairy Division, to show common defects in cheese, and the benefits in cool curing. Note that every exhibit bears an explanatory card. The same exhibit was made at the Simcoe Fair.

The Fruit Exhibit.

The fruit exhibit at Beachburg was looked after by Mr. A. McNeill, Chief of the Dominion Fruit Department, and at Simcoe by Mr. A. Gifford. It included apples from trees that had been sprayed, and apples from trees in the same orchard that had not been sprayed. This showed the great value of spraying. There were also samples from trees that had been pruned and from trees that had not been pruned, to show the increased size and better color of fruit obtained by proper pruning. A collection of desirable

and another of undesirable varieties of apples for the neighborhood, each apple in which was labelled, attracted much attention.

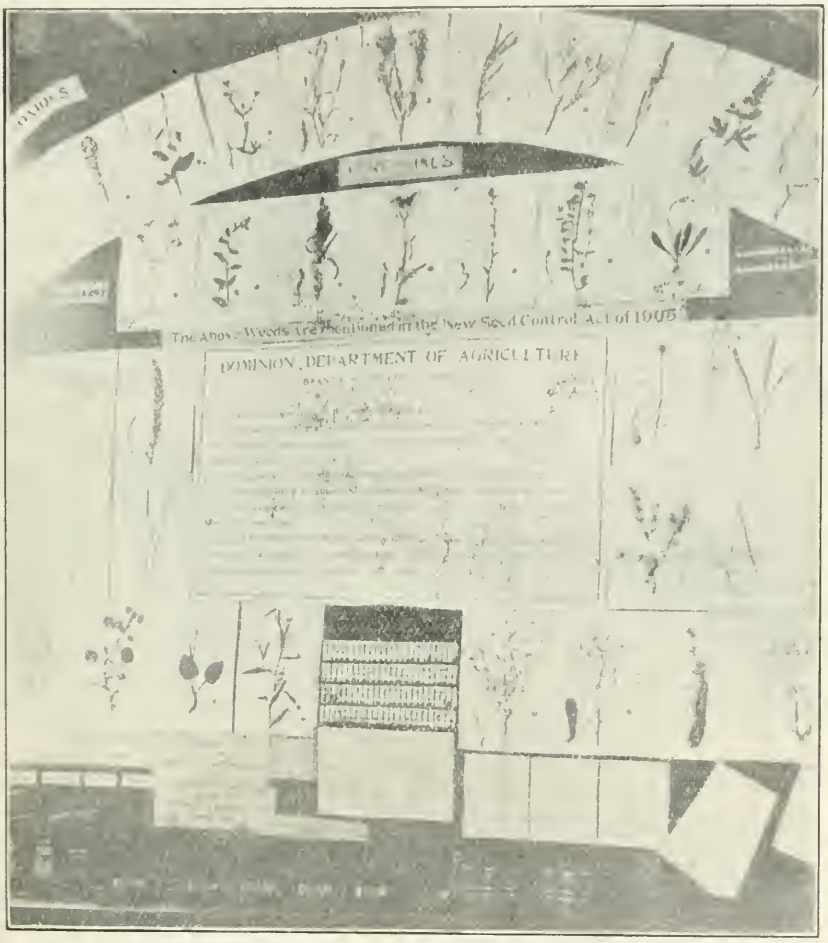
The commercial aspect of the industry was represented by exhibits of properly and improperly packed fruit showing fruit that was number 1 and number 2 and number 3 in quality and improperly marked fruit, including a fraudulently packed barrel, having the best apples on the top and bottom and inferior fruit in the interior. Violation of the Friut Marks Act was illustrated by means of packages of fruit. People interested in fruit growing were able to obtain much valuable information through the exhibits.

Educational Fruit Exhibit, arranged at the Beachburg Demonstration Fair, by the Dominion Fruit Division, at the request of the Ontario Department of Agriculture, showing the proper method of packing fruit for shipping, infractions of the Fruit Marks Act, etc.

Seed Exhibit.

A special exhibit prepared by the Dominion Seed Division, and in charge of Mr. T. G. Raynor, was of great educational value. Samples of the most common weed seeds in bottles, and of weeds pressed were shown with brief statements showing how these weeds could best be eradicated. The new Seed Control Act and its various provisions was explained to all interested by Mr. Raynor, who illustrated his remarks by means of special features contained in the exhibit. The benefit derived by the selection of seed was shown by representative samples picked from plots where seed selection had been followed and from plots where no attention to selection had been given. There were samples of the various seeds in process of germ-

ination illustrating the difference between good and poor seeds. For instance of some corn 90 per cent. was germinating and of others only 28 per cent. and so on. Another exhibit showed clearly the value of clean and selected seeds.



The educational exhibit, made by the Dominion Seed Division at the Beachburg and Simcoe Demonstration Fairs, at the request of the Ontario Department of Agriculture, illustrating the different weeds found in Ontario, their remedies, etc.

Agricultural College Exhibit.

The Ontario Agricultural College was represented by a splendid exhibit showing injurious and beneficial insects, pests that affect grain and other farm crops and methods of combating them. An aquarium attracted a great deal of attention, particularly on the part of the younger people whose interest it aroused. The exhibit served to illustrate the importance of interesting the young in matters of nature study.

A feature of both exhibitions that was greatly appreciated was cooking demonstrations given under the auspices of the Ontario Women's Institute. These were conducted in a tent provided for the purpose.

A small exhibit that was of keen interest to many was a model of a system of farm sewage disposal. It showed how a septic tank could be arranged that would dispose of all the sewage from an ordinary farm house in a perfectly sanitary manner. The cost of equipping an ordinary farm house with one of these systems was placed at about $45.

An educational exhibit, made by the Ontario Agricultural College at Beachburg Illustration Fair, 1906.

The Beachburg Fair.

In addition to these features there were several special exhibits at the Beachburg fair. One of these served to show the importance of raising the correct type of hog as well as the loss that is sustained by farmers through the careless handling and feeding of hogs. This was done by means of three live hogs. One was an animal that was too large to make an ideal side of bacon, one was an ideal type, and a third was too thin. These hogs were shown in a pen and printed cards drew the attention of the people to the weak and strong points of the animals.

In the main hall were shown five sides of bacon, furnished by the Geo. Mathews Co., Ltd., of Hull, Que. One side was a perfect specimen. Another showed several long bruises that greatly depreciated its value; these had been caused by the animals being hit when alive, shortly before they were slaughtered. The pork packers state that the loss to farmers by blows given their hogs, either by the farmers themselves or the drivers, amounts to hundreds of thousands of dollars a year. This side served to bring out forcibly the importance of careful handling of the live animal. Other sides showed the injury caused by feeding animals until they are too fat, soft

pork and other defects in bacon. Each side of bacon bore a printed card drawing the attention of the crowd to the different points it was desired to emphasize.

Believing that the people should be offered every inducement to watch the judging and take an interest in the live stock exhibits, the Department of Agriculture and the directors of the fair had a seat placed all around the horse ring. This feature of the exhibition was one of the best appreciated of all. The seat was crowded all afternoon, mostly by ladies and old gentlemen. On no other feature of the fair were the management more heartily congratulated by the public. The total cost of seating the ring was about $40. The seats were of a permanent nature and will last for years.

View of the judging ring at the Beachburg Illustration Exhibition, 1905. This ring is surrounded by a seat, made at a cost of about $40, which was greatly appreciated by the spectators, and which was used all afternoon.

The Simcoe Fair.

At the Simcoe fair special attention was given to exhibits by school children, and fancy drills, but owing to the heavy rain on both days of the fair these were not nearly so successful as they otherwise would have been, and as they always have been at this fair. The nature of these exhibits is fully described in the accompanying report of the fairs convention.

Another feature of interest was a gasoline engine at work sawing wood and pumping water, both at the same time. The idea of this exhibit was to illustrate means of economizing farm labor. The engine in use was capable of cutting ensilage and turning a hand separator as well, all at the same time. This exhibit was surrounded by a crowd all the time it was in operation. It was desired to show by the exhibit that the manufacturers of agricultural implements will be willing to make exhibits at the fall fairs, when the fairs are large enough to so arrange the exhibitions that the exhibits can be taken from one to another without inconvenience.

At both fairs cards were attached to all the leading exhibits to draw attention to their points of educational value. These cards were printed by means of stencils that can be purchased by any agricultural society at a cost not exceeding ten or twelve dollars. Some of the photographs taken

at the Beachburg fair, that appear in this report, show some of these cards. Owing to the unsuitable weather photographs could not be secured at the Simcoe fair.

The illustrations here published will give an idea of the nature of the various exhibits. It is believed that if exhibits of this nature can be introduced in connection with the majority at least of the agricultural exhibitions of the Province the educational value of our agricultural societies will be vastly increased.

Cooking demonstrations at the Beachburg Illustration Fair, 1905.

BUILDINGS USED BY AGRICULTURAL SOCIETIES.

On no one subject, concerning the work of the agricultural societies, does the Department of Agriculture receive as many requests for information, as in regard to the erection of suitable buildings for exhibition purposes. During the past two years an earnest effort has been made to obtain information that would be of value to societies but with very poor success. There are so few societies in the Province that own good buildings (over 85 per cent. of the societies lack proper grounds and buildings) that it has been found a most difficult matter to obtain information on this subject.

Those societies that have good buildings, in most cases are so situated that a description of their buildings would be of little value to the rest of the societies. As a rule, the best grounds and buildings are owned by societies whose exhibitions are held in close proximity to cities, such as those at Renfrew, Brockville, Collingwood, Strathroy and Aylmer. The comparatively large scale on which such exhibitions are conducted necessitates the erection of larger and more extensive buildings than are required by agricultural societies of the average class that are located in smaller centres. A few of the smalles societies, however, have exceedingly good buildings.

Another obstacle that has been encountered during the search for this information has been caused by the fact that a large proportion of the buildings in use by societies were erected many years ago, and no record of their cost is obtainable. It has been found, also, that it would not be safe to publish figures showing the cost of buildings now in use, owing to the fact that the price of timber and other material, as well as labor, in different sections of the province varies greatly. A few societies, whose grounds are in towns or cities or in close proximity thereto have been able to erect very satisfactory main halls at slight expense by arranging to have the hall utilized as a skating rink during the winter. In this way they are able to obtain a revenue from the building at a season of the year when the buildings of most societies are not in use.

The old style of main hall, used to accommodate all the exhibits, other than live stock, is going out of style. Its main disadvantage is the confusion and noise that is incurred by placing so many exhibits under one roof. Another weakness is that it forces those persons who desire to see

View of a part of the grounds of the South Renfrew Society, showing the main hall, grand stand and old sheep and swine sheds. The main hall is built on the same plan as the diagram for a main building published on another page.

certain exhibits to crowd past numerous other exhibits, in which they are not interested, in order to reach the exhibits they desire to see. This may happen several times in the course of an afternoon and causes unnecessary confusion and annoyance.

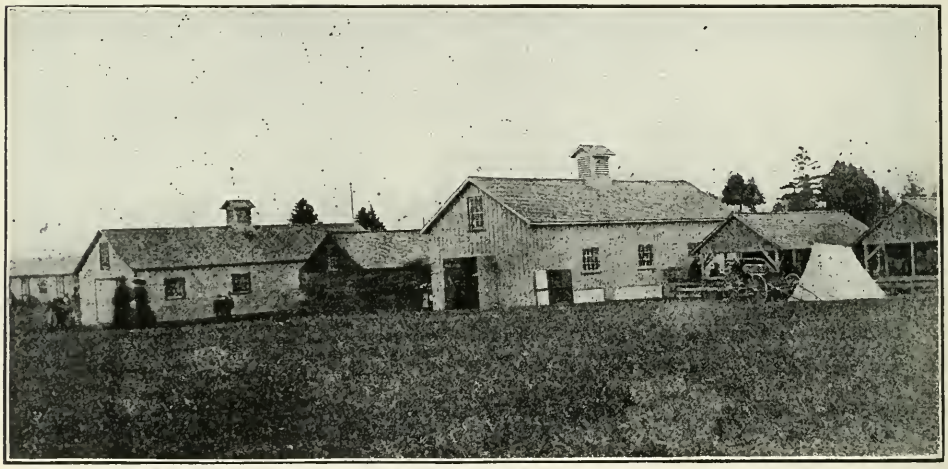
To take the place of a main hall a number of societies are erecting small buildings. In one may be shown such exhibits as roots, grains and vegetables, in another ladies' work and the art exhibits, in another carriages and machinery, etc. In this way a society that is unable to meet the expense of erecting a large building finds it possible to construct gradually the buildings it most needs.

In the erection of buildings for exhibition purposes it is desirable that they shall be as well lighted as possible, that the exhibits may be seen to advantage. This is a most important point. Some societies purchase wire screens and fasten them to the outside of the windows of their buildings to prevent their being broken by mischievous boys during the seasons of the year when the buildings are not in use. In other cases wooden shutters are used for the same purpose.

In the construction of a main hall, or, in fact, any exhibition building, plenty of room should be left for passage ways so that the crowd may walk through without becoming congested at any one point. It is never desirable to have only one stairway leading to the second floor, there should always be two stairways either opposite each other or so arranged that the crowd, when necessary may be kept entering on one side and leaving by the other. When the stairway is large it is not so necessary to see that the movements of the crowd are thus regulated.

Two stories in a main hall are not altogether satisfactory. It is tiresome to the crowd to have to go up and down stairs, and the noise of the people on the stairs or overhead is distracting to those below.

Where there is one floor above another it is well to use some deadening material under the floor, so that the noise of the feet of the people on the second floor may be muffled and thus prevent inconvenience to the people in the hall below. Every main hall should have at least two large doors so arranged that the crowd can pass in and out freely.



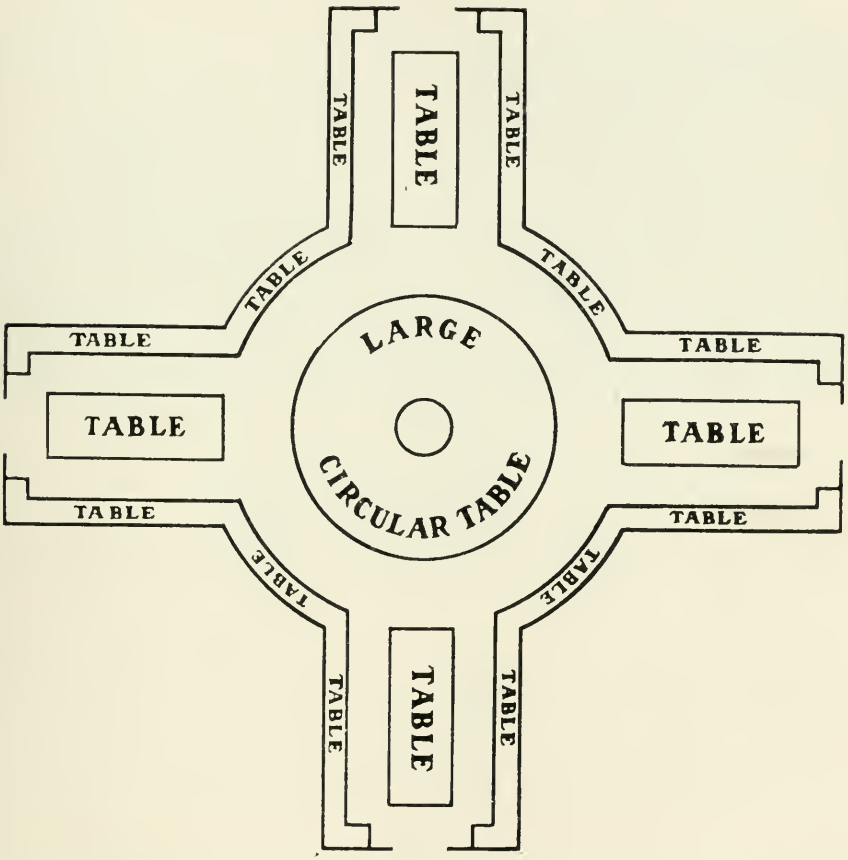
The grain and vegetable buildings and the poultry building of the South Grenville Society. These buildings are along the line of the use of separate buildings for exhibits rather than one large main hall. Size 30x50 ft. ; cost about $500 each.

The variety of the buildings erected for exhibits of live stock is so great, and the financial condition of societies is so different, it is impossible to recommend any set or sets of buildings that will be suitable for all. Every society should provide sufficient accommodation for the live stock exhibits to make it possible for all the exhibits to be unloaded and shown in pens. It is necessary, at present, for a large proportion of the societies to keep the stock in the waggons in which they are drawn to the grounds. This is very unsatisfactory to the exhibitors and to the sight-seers, as well as to the judges, and leads to much dissatisfaction.

The cheapest form of accommodation for hogs and sheep is to erect small wooden pens against the fence. Thus, material is required for only three sides of each pen. Later, additional protection for the animals may be obtained by adding a lean-to roof. A large proportion of the societies have erected not only their sheep and swine pens against their fences, but their horse and cattle sheds as well. In some cases poultry, sheep and even

cattle and horses are shown under the grand stand. Wherever possible stalls or pens should have doors that will make it possible to lead out the animals without having to pass in the rear of the other animals on exhibition.

When erecting buildings for exhibits of live stock care should be taken to see that they are located in as central a position as possible. They should be on the highest ground so as to permit of ready drainage and to avoid mud in rainy weather. A large number of societies have made a great mistake



A number of agricultural societies have main halls, built on this plan, that have given general satisfaction. There is plenty of table space provided by the tables around the sides and in the centre of the wings. The numerous doors and passages make it possible for the crowd to be kept moving freely. It is possible to group the exhibits in different wings such as fruit and vegetables in one, ladies work and art exhibits in another, etc.

by placing their live stock buildings at a remote portion of their grounds that the horse ring might have the best position in the centre of the grounds. This forces the spectators to walk the length of the grounds before they can see the live stock exhibits, and tends to discourage the inspection of the stock by sight-seers. Often people will not take the trouble, and leave with the impression that the live stock exhibits are comparatively unimportant. Endeavor, as far as possible, to give the live stock and other agricultural exhibits the most prominent location in the grounds. In this way you will

please both the sight-seers and the exhibitors, and at the same time emphasize the agricultural features of the exhibition.

The appearance of the grounds can be greatly improved by the planting of trees. Several societies have planted trees around their horse rings and at central points in the grounds with excellent results. The shade from the trees is always appreciated on warm days by the spectators, and adds much to the appearance of the grounds and buildings. It pays to keep the buildings well painted. Not only do the buildings last longer but the effect on

Sheep and swine sheds of the Petrolia Society. This illustration serves to show how a few trees add to the appearance of grounds.

the sight-seers when entering the grounds is more pleasing. A few societies have been able to have their buldings painted free in return for allowing it to be announced on the buildings that they were painted with a certain brand of paint.

When planning to erect buildings always arrange to have them constructed in as permanent a manner as possible. It will be the cheapest course in the end.

THE OWNERSHIP OF LIVE STOCK BY AGRICULTURAL SOCIETIES.

Several societies in Ontario are doing valuable work through the ownership of pure-bred male stock. This was one of the first lines of work undertaken by the pioneer agricultural societies in Ontario. Some of the societies, first organized, sent members to the Eastern States and Great Britain to purchase breeding stock. From that day to this societies in Ontario have owned and circulated pure-bred stock.

Fifty to seventy-five years ago this work was carried on extensively. As the country became settled the increase in the number of private breeders led to this line of work being discontinued by many societies. Of recent years there have been only six or seven societies in Ontario that have owned stock. These societies have obtained excellent results. Buyers of stock who visit the sections where these societies exist report that they are able to purchase more and better stock in those districts than in sections where there are no such societies.

A striking evidence of the benefit of the work done by these societies is furnished by the township of Osgoode Agricultural Society, in Russell county. This society has owned pure-bred stock for many years. For several years a leading agricultural paper in the Ottawa Valley offered prizes for the county agricultural society that had the best exhibit of live stock at its fall fair. Two years out of four the first prize was won by the County of Russell Agricultural Society. The other two years it missed winning first place by only a few points. A large share of the credit for this excellent showing was due to the work that had been done by the township of Osgoode Agricultural Society in that county, through the distribution of pure-bred breeding stock all through the township. Most of the stock shown at the county fair was from this township. It is freely admitted by members of the county society that the county would not have made the showing it did had it not been for the stock that had been bred from the pure-bred animals owned by the township society.

A ram lamb owned by the Osgoode Township Agricultural Society.

There are seven societies in Ontario owning pure-bred stock. These, together with the number of animals they owned in 1905, are as follows:—

The Township of Osgoode Agricultural Society, in Russell county, 3 bulls, 5 rams, and 4 hogs.

The Township of Drummond Agricultural Society, in Lanark county, 2 bulls and 2 hogs.

The Township of Bathurst Agricultural Society, in Lanark county, 1 bull (borrowed), 2 hogs and 2 rams.

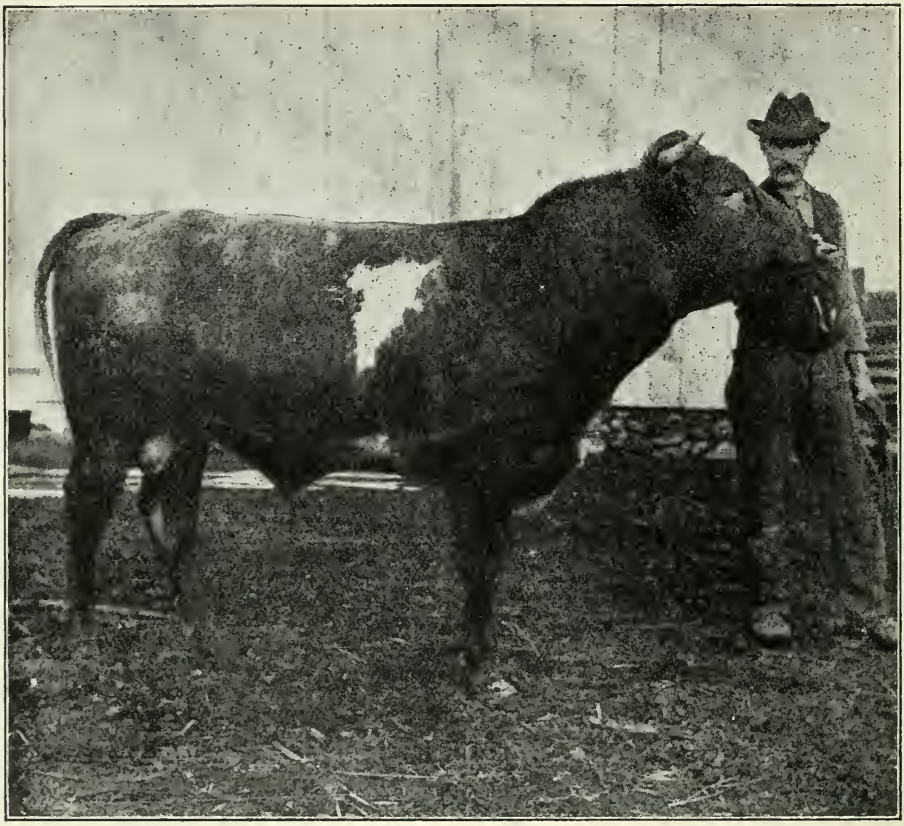
The Douro and Dummer Agricultural Society, in Peterboro' county, 8 bulls, and 2 hogs.

The Rochester and Maidstone Agricultural Society, in Essex county, 13 bulls.

Maidstone and Sandwich East Agricultural Society, in Essex county, 7 Shorthorn bulls and 7 hogs.

One reason why this line of work has not been carried on more extensively has been the fact that the basis of the distribution of the Government grant has not taken into consideration the value of the work being done by the societies. Hitherto a society owning one or two animals was likely to obtain as large a Government grant as a society owning a large number. As the expense of keeping the stock increased in proportion to the number main-

tained, there was no encouragement for the development of this line of work. With a change in the distribution of the Government grant, which will enable these societies to receive their grants in proportion to the number of animals they own, there should be a great increase in the number of these societies, particularly in sections in New Ontario not adapted for the holding of agricultural exhibitions.



This is one of the thirteen pure-bred Shorthorn Bulls owned by the Rochester and Maidstone Agricultural Society in Essex County.

Societies in Nova Scotia.

Over 90 per cent. of the societies in Nova Scotia own and circulate pure-bred stock. Very few societies in that Province hold exhibitions. A great deal of work of this kind is carried on also by the societies in New Brunswick and Quebec. The Departments of Agriculture in these provinces report that these societies are doing valuable work. Breeders of live stock, instead of looking upon these societies as competitors, report that they have been a great benefit rather than an injury to them. In explanation they say that many men have become interested in the breeding of pure-bred stock through the agricultural societies who would not have been induced to purchase pure-bred stock for themselves. These men later purchase female stock and breed them to the pure-bred males owned by the societies and thus are able to raise pure-bred animals.

Methods of Management.

These societies work in three ways. In Nova Scotia many of the societies purchase pure-bred stock from breeders and auction off the animals in their sections. People buying this stock are required to give a guarantee that they will keep the stock in the section for a stated number of years, and that members of the agricultural society will be allowed to breed to the animals at a certain low price.

Some societies buy the stock and board it at central points in their vicinity. When it becomes desirable to obtain new animals the old ones are sold either to members of the society or to the butcher.

The third method is for the society to purchase the stock and give it to farmers at central localities upon condition that they shall keep the animals free of cost to the society for a certain period. At the end of this time the animal becomes the property of the person so boarding it. Each of these methods has been tried with success. An inspector is generally appointed whose duty it is to see that the animals are kept in a proper manner.

One of the most successful societies in Ontario is the Rochester and Maidstone, in Essex county, which was organized in 1852, with 82 members. This society in 1904 had 184 members and owned 14 pure-bred bulls. The society allows farmers to form themselves into divisions. The members of each division sign an agreement to pay the main society not less than $25 a year for three years. The society the first year gives the division an advance of $80. With this money the bull is bought. Where a division has 15 members the members pay $2 each, which makes $30, that is paid to the head society each year for three years. After the bull is purchased some one of the members agrees to keep the bull for three years for the benefit of the members of the division. Each member of this division is entitled to the service of the bull for three cows. If he has any more cows he gets them served for 50 cents each. At the end of three years the division has repaid to the society the amount advanced for the purchase of the bull.

In the case of the Maidstone and Sandwich East Agricultural Society, in Essex county, 7 bulls and 7 boars are located in 7 different parts of the township, a bull and a boar being kept in each locality. The members of the society in each section pay not less than $2 each and some of them as high as $2.50 as their membership fee, which includes their share in the expense of purchasing and maintaining the stock. Each member is allowed the use of the bull for three of his cows and of the boar for two sows twice a year. The bulls are kept for three years in each locality, after which the animal becomes the property of the keeper, and a new one is obtained. For the keep of a boar the man who has it is allowed $10 a year, and at the end of two years the boar becomes his property.

The Drummond Township Society in Lanark County has owned pure-bred stock every year since 1868. Members are allowed to take two cows to each bull except when the bull is a young animal, when they are limited to one; one sow to each boar, and two ewes to each ram, for the membership fee of $1. The breeding season for the bulls is June and July and they are placed at three central points and changed around every three weeks. The members keeping them receive $2 a week and the privilege of using the bull on their herds. During the remainder of the year the society usually pays $3 a month for the board of the bulls. Ten dollars is usually paid for the keep of a boar for three months. Members who keep the ram, receive, in

addition to its fleece, twelve and a half cents a week for the keep of each ewe brought to the ram by a member.

While it is not likely that there will be a material increase in this line of work by the societies in older Ontario it is probable that more of the soieties in newer Ontario will soon commence work on these lines and that their number will show a great increase during the next decade.

A pure-bred Ayrshire bull, owned by the Drummond Agricultural Society, Lanark County, and some of his get.

SPRING STALLION SHOWS.

Spring stallion shows have been held with great success by a large number of the agricultural societies in the province. They generally are held during the latter part of April or the first week of May, and where properly advertised are well attended. The general custom is not to charge any entrance fee, the exhibitions being open to the public. In some cases a slight entrance fee is charged.

A great deal of care has to be exercised in the management of these exhibitions. The owners of the competing stallions often are offended easily and if they feel that they have been unjustly treated they make a great noise, and do their best to injure the standing of the show. No better line of work, however, can be undertaken by any agricultural society. Where the show has once been held and proved a success the farmers of the vicinity are quick to give future shows their hearty support. By affording the farmers an opportunity to compare one stallion with another they are enabled to pick out the best animals. Often a stallion that makes an excellent appearance when shown by itself is found to be a very inferior animal when it is placed in comparison with several others. It is in the opportunity they afford the public of comparing the animals shown that the chief value of spring stallion shows lies.

There are several different ways of conducting these exhibitions. It always is well to advertise them widely. The most successful exhibitions are those where prizes are offered and where the judges, when making the awards, are required to explain their reasons for their decisions. A judge with sufficient tact (and only a judge with great tact should be engaged) is able to point out the strong points of the winning animals, without referring to the weak points of the others. In this way the creation of hard

feeling generally is prevented. The judge or some other competent person should give a short address on the principles underlying successful breeding, using the animals present, as far as practicable for illustration purposes.

Spring stallion show held on a rainy day by the Lambton East Agricultural Society.

Another method is to simply advertise that a show will be held at a certain time, and that a veterinary will be present to examine all competing animals. It can be announced that prizes or diplomas will be awarded to every animal pronounced sound by the veterinary. Forthis work it is wise

The Road and Carriage Class at the Tara Spring Horse Fair.

to engage a veterinary from a distance who is unknown to the exhibitors. In this way animals that are not sound are ruled out, much to the benefit of the farmers of the section, many of whom may be unable to detect unsoundness. Breeders who refuse to enter animals under these conditions do so generally because they are afraid their stallions will not pass inspection. The farmers in the vicinity are quick to come to this conclusion.

A third method is not to give any prizes, but simply to advertise the show and give the farmers an opportunity to inspect the animals for themselves. The latter method is not satisfactory as either of the former two, but is much better than not holding any show at all. The only expense the society incurred is that of advertising and a few minor incidental expenses. It is well always for the society to arrange to have the animals inspected by a veterinary. Prizes should not be offered for grade or general purpose stallions.

Most societies, when prizes are given, offer cash prizes, although some distribute diplomas, which do not cost much and generally are much more

Tara Spring Horse Fair, 1905. Draught Horse exhibit.

appreciated by the exhibitors as the diplomas are used for advertising purposes. The average agricultural society should be able to hold one of these exhibitions at an expense not exceeding $50.

It is a good plan to offer prizes for the best stallion in each class and three or four of his get. By having the young stock on the grounds the spectators are enabled to see the kind of colts the respective stallions are leaving. Much good is accomplished each year by the holding of these exhibitions.

CO-OPERATIVE WORK BY SOCIETIES.

By co-operating in various ways, societies can add many interesting features to their exhibitions. This has been done with great success in the Ottawa Valley. Although there are a number of agricultural societies in Ontario that hold larger exhibitions than any held in the Ottawa Valley, there is no other one portion of the Province which has so many first-class purely agricultural exhibitions. This is due, in a large measure, to the fact that the societies have co-operated for several years in the introduction of special features at their exhibitions. Most of these features have been described in previous reports. They included the holding of athletic competitions for the championships of the respective counties with a final meet to decide the championships of all the counties, and the holding of an annual competition to decide which exhibition in the district was the best.

The first competition was limited to exhibits of live stock only, but later competitions included buildings and grounds. The last competition was

held in 1904. The four leading exhibitions were those held at Beachburg, Metcalfe, Renfrew, and Richmond, and the points which they won as published in the *Ottawa Valley Journal* which managed these exhibitions, were as follows:—

STANDING OF THE COUNTIES.

	Possible No.	Beachburg.	Metcalfe.	Renfrew.	Richmond.
Heavy horses	100	90	95	77	75
Light horses	100	90	60	90	50
Beef cattle	100	100	40	45	60
Dairy cattle	100	72	88	74	80
Swine	100	85	65	90	88
Sheep	100	100	87	49	82
Poultry	100	76	100	80	50
Main Building	36	36	20	25	25
Cattle Sheds	24	24	...	16	16
Horse Sheds	24	24	12	12	11
Sheep Sheds	12	12	10	10	10
Swine Sheds	12	12	9	8	10
Poultry House	12	10	12	9	10
Ground size	40	40	40	40	35
Arrangements and Con	30	30	18	23	19
Neatness	10	10	7	7	6
Total	900	811	663	655	626

By means of the publication of such a table as this each year the societies have been enabled to see how they compared in each of their different departments with others. They thus were enabled to strengthen the weak points of their various exhibitions. This has had much to do with the general improvement of the societies. The competition has tended also to create greater interest in the exhibitions as the local people were led to realize that their exhibitions in a large measure represented their counties, and for this reason they were anxious that their exhibition should be as great a success as possible. The prizes in this competition were awarded upon the decisions of the judges sent out by the Department of Agriculture, who visited the fairs. There are several sections in Ontario where there are local fairs associations in which it should be possible to conduct competitions of this nature.

LIVE STOCK JUDGING CLASSES.

Last year the *Ottawa Valley Journal*, in co-operation with a number of the agricultural societies, offered prizes for judging competitions by farmers sons.

With a view to preparing the young men for the work and furnishing others with some useful and practical information regarding live stock, instruction classes were held during June at the following places:—Cornwall Centre, Lancaster, Vankleek Hill, Maxville, Westboro, Almonte, Vars, Winchester, Renfrew, Beachburg and Newington. The animals for the work were obtained from farmers in the districts where the classes were held. The experts in charge of the work were:—Messrs. H. S. Arkell, of the Ontario

Agricultural College, Guelph and F. M. Logan, Amherst Point, N.S., who were appointed, and their expenses paid, by the Ontario Department of Agriculture.

Great interest was taken in the work by the farmers, and especially the young men, who, realizing the need of instruction and the benefit to be gained, gave it united support. In some cases farmers brought animals several miles to a central point in order to make the class a success. At one place, Maxville, there was an attendance of three hundred and fifty farmers and farmers' sons, and at each of the other places, except Renfrew, the attendance ranged from one hundred to two hundred and fifty.

The work was conducted as follows:—Four or five animals were brought into the ring, and the farmers were asked to place the animals in order of merit and give their reasons for so doing. After all who wished had been given an opportunity to voice their opinions the expert placed the animals and gave his reasons, after which, as a rule, a general discussion took place. Dairy cattle were used in the dairy sections, and beef cattle in the beef sec-

A Class in Live Stock Judging, held during the summer of 1905 in the Ottawa Valley, preparatory to the Live Stock Judging Competitions for Farmers' Sons, held at the fairs in the fall.

tions, and heavy draught horses and bacon swine at all points. The classes were well advertised, and although the work was inaugurated by the *Ottawa Valley Journal*, a number of the local papers in Eastern Ontario willingly helped to push it along.

In case other agricultural societies of the Province might like to introduce these competitions at their exhibitions the rules used in the competitions at the fairs in the Ottawa Valley are here published.

The Rules that Governed the Competition.

1. Competitors must be under 25 years of age; they must be farmers or sons of farmers living in the county in which competition is held.

2. Anyone who has spent more than six months at an Agricultural College shall not be eligible.

3. Competitors will be expected to judge classes of heavy horses, beef cattle, dairy cattle, and bacon pigs.

4. In summing up the following values will be assigned the respective classes:—Heavy horses, 100 points; beef cattle, 100 points; dairy cattle, 200 points; bacon pigs, 100 points.

5. Competitors will be expected to place three animals in each class and give their reasons for placing the one they set first ahead of the ones they place second and third, and for putting the second ahead of the rest of the animals in the class.

6. Competitors will be expected to write their answers upon cards furnished for the purpose.

7. Animals for the judging work will be selected from stock on exhibition.

The live stock judging by farmer's sons held at the Beachburg Illustration Fair, 1905.

8. As far as possible the judging competition will be held before the regular expert judges pass upon the stock. In case any classes to be used in the contest have been already passed upon by the regular expert judges then animals that have not shown against each other or that have not been placed will be used.

The prizes awarded were:—1st prize, $10.00; 2nd prize, $8.00; 3rd prize, $5.00; 4th prize, $4.00; 5th prize, $3.00.

On the day of the competition each competitor was furnished with a card which he was required to fill in with his name and address and on which he had to mark the order in which he placed the three animals. A blank space was left on each card in which the competitor was required to write his reasons for placing the animals in the order he did. These cards later were handed to the judges.

NOTES ON THE WORK OF AGRICULTURAL SOCIETIES.

Every year agricultural societies in different parts of Ontario introduce special features at their exhibitions, many of which might be tried with profit by other societies. A report concerning some of these features should be of interest to societies generally.

Last year the agricultural society at North Bay, which is located in rather a sparsely settled section, instead of offering small prizes in many sections, reduced the number of its classes and offered larger prizes in each. The result proved very satisfactory, as it led to a keener competition and brought out the very best exhibits the section could produce Previously, some people had refused to exhibit owing to the smallness of the prizes.

Another line of work undertaken by the same society was the holding of a Good Farms Competition, on somewhat the same lines as those held each year in the province of Quebec. In a letter to the Department of Agriculture, Mr. A. G. Browning, the President of the society, had the following to say about this work:—"For some years I have been watching the work of the agricultural society here, having been its first president, and being connected with it from the beginning. I became convinced that while the society was probably doing good work along the lines of providing holiday amusement for the general public and distributing a little money, not much good was being done. The breed of cattle was not being improved, the prizes for fancy work and articles of this kind did not encourage the farmer, but were apt to go to the people of the towns, who exhibited the same articles year after year, or purchased them from someone else. In the roots and vegetables department the genuine farmer did not stand any chance at all as the market gardeners came in and took all the prizes. Very often it was the case that the poorest farmer in the locality happened to have the biggest pumpkin or squash, and all around the money seemed to be wasted and nothing done to arouse interest in good farming.

"While I feel somewhat strongly on the subject and am perhaps inclined to judge too harshly, I would not desire to go on record as stating that no good was done by the society. At the same time the results were not at all commensurate to the work done or the money spent. A number of us happened to be thinking along the same lines, and at our annual meeting we decided to either drop the society work altogether, or to start out on new lines. After considerable discussion and consideration it was decided to confine our efforts for a few years to cattle and horses and pay particular attention to the encouragement of those who were trying to improve their farms. It seemed to us with the funds at our disposal, only a limited number of prizes could be offered of an amount worth while and if you will refer to our prize list of last year you will see it is a very short one but the prizes offered were fairly large.

In the good farms competition the prizes offered were $15, $10 and $5 for the best three farms. In our advertisement we stated that particular attention would be paid to the fences, state of clearing, cultivation of the ground, farm buildings and quality of the stock. The judges were instructed not to lay any stress upon the number of acres, but upon the way in which the land under cultivation was worked. Our idea was that a small farm well worked was more to be desired than a large farm not properly attended to.

"The competition was advertised early in the spring through the papers and at our spring sale of stock. It was kept prominently before the public during the summer, and when the full prize list was gotten out public notice was given to the farm competition. We left the matter of points to the

judges, and they will be able to tell you how the decision was arrived at. A considerable number of farmers entered the competition and great interest was taken in it. The result was, in our opinion, very successful, and we intend to lay more stress on the competition this year, giving, if possible, two or three sets of prizes, along the lines of farm buildings, quality of stock, and general condition of the farm land. My conviction is that money expended in this way is spent to very good advantage."

Mr. G. H. Hutton, of Easton's Corners, one of the judges sent out by the Department of Agriculture, who, together with Mr. James Snell, of Clinton, judged the farms entered in this competition, has the following to say in regard to the competition:

"There were seven farms entered and judged in the good farms competition held by the society at North Bay. The entries were limited to the township. I believe there was considerable interest taken by the competitors, there being only one farm which did not give evidence of preparation for the event. I believe that a continuation of this line of work from year to year would stimulate great interest, rivalry, and consequent improvement. Upon one farm there was evidence of thorough work, by way of preparation, which would result in cash returns to the owner greater than the value of all the awards. I believe that six-sevenths of the competitors did improve their places, and that for them the society did good work last year.

"Such a line of work strikes the all round management of farms and affects the cash returns of all concerned and deserves encouragement, not only in the northern part of this Province but it would be worth trying in older Ontario. We used the following scale of points and asked each man a certain list of questions regarding each item in the scale:

	Possible score.	Points allowed.	Comments.
1. Cultivation	80	...	...
2. Live Stock	60	...	...
3. Buildings	30	...	...
4. Fencing	25	...	...
5. Orchard and Garden	10	...	...
	200		

SAMPLE OF PRIZE LISTS FOR SCHOOL CHILDREN'S COMPETITIONS.

Many societies that would like to start holding school children's competitions at their fairs do not know how to set to work. For their guidance the following extracts from the prize lists of the Central Exhibition at Guelph and of the Norfolk Union Fair at Simcoe are published.

Class 95. Writing and Drawing, Nature Study and Manual Training.

High Schools, Collegiate Institutes and Private Schools not allowed to compete.

Rules—read them carefully.

All work must be done by the pupil, not by the teacher, and all be done since the last exhibition, and pupils must help to arrange the exhibits in the Nature Study Department.

One prize only allowed a pupil in each section.

Entries must be made by the teacher for all the entrants from his or her school room on one entry form.

The name of the pupil, the number of the school section, and the name of the township or other description must be plainly written on the book, etc., and in the entry form.

At least one-half of work in drawing books should be completed. 50 per cent. of marks for optional work.

In drawing classes, pupils may continue any further work they may desire up to the time of the exhibition, and their work will be judged in the class to which they belonged before the holidays.

Teachers not finding it convenient to be present may forward the work to the secretary, who will return it at close of exhibition, and it must, if sent by mail, be received not later than noon on Monday, September 11th.

Sec.		1st	2nd	3rd
1	Best drawing for 2nd Class, No. 2 drawing book...	$1 00	$0 75	$0 50
2	Best drawing, for 3rd Class, No. 3 drawing book...	1 00	75	50
3	Best drawing, for 4th Class, No. 4 drawing book...	1 00	75	50
4	Best specimen of pencil drawing, original, open to all classes in Public Schools	1 00	75	50
5	Best pen and ink sketch, original, open to all classes in Public Schools.....	1 00	75	50
6	Best specimen writing, any style, legibility, neatness and uniformity to be considered, 2nd Class, on foolscap or similar paper. Text—First two verses of "Will and the Bee," Second Reader, and the alphabet in capitals and small letters, and the figures	1 00	75	50
7	Ditto for 3rd Class. Text—First two verses of "Lord Ullin's Daughter," Third Reader, and the alphabet in capitals and small letters and the figures. 1st by C. L. Nelles, cash...	1 00	75	50
8	Ditto for 4th Class. Text—First two verses of "A Psalm of Life," Fourth Reader, and a Bill of six items of goods purchased from G. B. Ryan & Co., Guelph, Sept. 13, 1904, and receipted Oct. 1. 1st by Miss C. Anderson, cash	1 00	75	50
9	Ditto for 5th Class. Write an "Application for Situation as Book-keeper," in G. B. Morris & Co.'s Hardware Store, Guelph. Draw envelope and address it. Pupils in the Commercial Class Guelph Public Schools barred	1 00	75	50
10	Ditto for 5th Class. Same as Section 9. Open to all Schools	1 00	75	50
11	Best specimen Ornamental Engrossing, open to all classes—The Lord's Prayer	1 00	75	50

Nature Study.

The South Wellington Farmers' Institute have kindly contributed $25 towards the prizes in this class.

1—These prizes are offered to encourage nature study in the Public and Separate Schools. The teacher must certify that the collections have been made in connection with the school by the co-operation of the pupils, or by an individual pupil, and must have been done since last Exhibition.

2—The prizes in each class are $2.50, $2.00, $1.50, $1.00 and 50c.

3—Each exhibit must show plainly the name and place of the school, and the name of the teacher.

4—Entries close September 9th, and all exhibits must be in position by 12 o'clock, September 12th. No fee is charged in any class under this heading.

5—The preparation of exhibits should be as nearly as possible according to directions given in the "Hints on Nature Collections," a bulletin prepared by the Macdonald Institute.

Prize List.

12—Collection of Wild Plants and Flowers, picked and pressed, while in bloom, showing root and mounted, and correctly named.

13—Collection of Noxious Weeds, pressed and mounted.

In Sections 12 and 13, pupils from any school may compete individually for these prizes, and use their exhibits collectively for a sectional exhibit, the prizes being duplicated for this purpose. Pupils of Macdonald Consolidated School barred in Sections 12 and 13. See Sections 14 and 15.

14—Same as Section 12; open to all schools.

15—Same as Section 12; open to all schools.

16—Collections of seeds of noxious weeds, in glass vials, mounted on cards—vials not necessarily full.

17—Collection of grains in the head, 5 heads of each variety, stems about 12 inches in length, supported on cards.

18—Collection of grasses and clovers; 5 stems of each as in Section 17.

19—Collection of leaves or twigs of cultivated or forest trees.

20—Collection of native woods, showing bark and surfaces. Each specimen not to be more than 5 inches in length.

21—Collection of insects, injurious or beneficial.

22—Collection of noxious weeds, newly pulled, each bearing a label or tag with name and locality. Specimens should show the complete plant, with flowers and fruit, if possible, but care must be taken not to scatter seeds by means of any of these exhibits.

23—Bouquet of cut flowers grown on school grounds or in school house.

24—Drawing of a plant, bird and insect, grouped if possible by the pupil of the school.

25—Photographs of natural scenery, by a pupil of the school.

26—Naming competitions, open to individual pupils of the public or separate schools. This will include the naming and discussion of several varieties of apples, grains, weeds, wild flowers, birds or other common outdoor objects, $3, $2.50, $2, $1.50, $1 and 50 cents.

27—A collection of nature notes kept in the school by the teacher and pupils, and showing interesting events from day to day in the outdoor world. Such may include the arrival, nesting, and food of birds, the opening of flowers, the appearance of insects, the leafing of trees, the sowing or planting of crops, the blossoming of fruit trees, the occurrence of storms or floods, and any similar items of interest. These should be written, as far as possible, by the pupils themselves, under the teacher's guidance, and should give date, place and all necessary details over the signature of the observer.

A neat scribbling book, written in pencil, will be satisfactory for this purpose. It will be judged for neatness, completeness and accuracy. This would require only a few minutes at a set time each day, say the first thing in the morning, and would be a splendid exercise in training the observation.

28—To the teacher and pupils of a public school section making the best and best arranged exhibit of roots, vegetables and grain, $5, $3 and $2.

Norfolk Union Fair.

The following is taken from the programme of the Norfolk Union Fair:

On the grounds at 2 p.m., the following programme of school competitions will be carried out:

1—Best rural school section display, not less than 10 pupils, in conveyance drawn by four horses.

1st Prize	$15 00
2nd "	10 00

Wand Drill by School Children at Chesley Fair.

2—For rural school section of one teacher. Best drilled and marching squad of 12 or more pupils and teacher.

1st Prize	$8 00
2nd "	6 00

3—For rural school section of two teachers. Best drilled and marching squad of 16 or more pupils, accompanied by both teachers.

1st prize	$10 00
2nd "	8 00

4—For school in towns and incorporated villages. Best drilled and marching squad of 20 or more pupils under command of teacher.

1st prize	$10 00
2nd "	8 00

5—Best class in club swinging of not less than 10:

1st prize	$3 00
2nd "	2 00

6—Best class in wrist exercises of not less than 10:

1st prize	$3 00
2nd "	2 00

7—Boys' race, under 16, 100 yards:
1st prize $1 00
2nd " 50
3rd " 25
8—Boys' race, under 13, 75 yards:
1st prize $1 00
2nd " 50
3rd " 25
9—Boys' race, under 10, 50 yards:
1st prize $1 00
2nd " 50
3rd " 25
10—Boys under 16, kicking football:
1st prize $1 00
2nd " 50
3rd " 25
11—Boys under 16, throwing baseball:
1st prize $1 00
2nd " 50
3rd " 25
12—Boys under 16, three-legged race:
1st prize $1 00
2nd " 50
3rd " 25
13—Girls' race, under 14, 75 yards:
1st prize $1 00
2nd " 50
3rd " 25
14—Girls' race, under 10, 50 yards:
1st prize $1 00
2nd " 50
3rd " 25
15—Girls' race, under 8, 40 yards:
1st prize $1 00
2nd " 50
3rd " 25

Tug-of-war—For teams of six public school boys, 14 years and under; each team to represent a minor municipality in the county—prize 6 sweaters.

Entrance for competition, free.

Teachers must accompany their own scholars in procession.

Schools must be drilled when on the grounds by their own teacher or teachers or one of the pupils.

The same school may compete in section 1, and also sections 2 or 3.

For No. 2, two adjacent rural school sections, with average attendances of 30 or less, may combine.

All schools competing will meet at high school grounds, Simcoe, at 1 p.m., form in procession at 1.30 p.m. sharp, and march with the band to the fair grounds, where the programme will be carried out.

Teachers and pupils competing and in procession will be admitted to grounds free.

All school children in the county will be admitted to the grounds free on the afternoon of the 18th, but the teachers from each school must procure tickets for their scholars from the secretary previous to the fair.

Ages of children competing in races must be certified to by their teacher.

In sections 1 to 6 the prize money shall be paid to the teacher who shall divide it among the children who have helped in making the exhibit, or for the establishment of a library or any other beneficial object in connection with the school.

In sections 7 to 15, the prizes will be books or other articles to the value named.

Programme and procession under charge of R. W. McCall, H. B. Donly, W. S. Carpenter,, A. H. Smith, S. C. Kitchen and H. F. Cook, B.A.

Nature Study.

In order to encourage the observation of natural phenomena among the pupils of our schools, the directors of the Norfolk Union Agricultural Society have pleasure in offering the following prizes for competition. It is the intention of the directors to encourage this study of nature as one of the educational features of their exhibition and would ask for kindly co-operation of teachers, parents and scholars.

1—These prizes are for competition either by individual pupils or by any number of pupils co-operating, but any number of individual pupils or groups of pupils may compete for the same prize, and are open only to the schools of Norfolk County.

2—A card with the name of the exhibitor, the number of the school, and the name of the township or location must be securely fastened to each exhibit.

3—Each plant shown in sections 1 and 2 shall be separately tied to admit of individual inspection. The plant of each variety shall be neatly bound together and labelled.

4—All the work in connection with each of the exhibits must have been done by the pupils under the direction of the teacher and with his or her assistance or supervision.

5—All entries must be made by the teacher on behalf of the pupils, certifying to their correctness. No entry fee in this class. All exhibits must be on the grounds and in position by 12 o'clock on Tuesday, October 17th.

6—The prize money shall be paid to the teacher, who shall divide it among the children who have helped in making the exhibit, or for the establishment of a library or any beneficial purpose in connection with the school.

Prizes for Collection of Grain, Insects, etc.

1—For the best and best arranged exhibit of grain in the straw, the growth of the current year, showing stools, branches, and part of roots, consisting of six complete plants of each variety, with also a pint bottle of each sample of said variety of grain.

1st prize	$5 00
2nd "	3 00
3rd "	2 00

2—For the best and best arranged exhibit of clovers and grasses, the growth of the current year, showing all branches and part of root of each plant. This exhibit to consist of at least six plants of each variety shown —at least six varieties must be shown in each exhibit in this section.

1st prize	$5 00
2nd "	3 00
3rd "	2 00

3 for the best and best arranged exhibit of roots, fruits and vegetables:

1st prize	$5 00
2nd "	3 00
3rd "	2 00

4—For the best and best arranged collection of beneficial and injurious insects, mounted and properly labelled, and arranged in groups:

1st prize	$5 00
2nd "	3 00
3rd "	2 00

Apple Naming Competition.

A number of varieties of apples will be mixed together. The contestants will then, in the presence of the judges, pick out the apples, naming the variety of each, and the quality. Seventy per cent. for correct naming and thirty per cent. for quality. Open to boys or girls of Norfolk County from ten to sixteen years of age. Judging to take place on Wednesday, October 18th, at 1.30 p.m. Entrance free.

1st prize	$2 00
2nd "	1 50
3rd "	1 00

ODDS AND ENDS.

Baby shows have been held with success by a number of societies. The custom is to offer prizes to every woman who exhibits a baby. This has the effect of leading many women to bring their babies to the exhibition, and to give those present an opportunity of comparing the little ones. Where these baby shows have been properly advertised they generally have created a great deal of interest. Special prizs can be offered for twins, the fattest baby, the tallest baby for its age, etc.

The secretaries of many agricultural societies are editors of papers. This is the case with the South Renfrew society, the secretary of which is Mr. W. E. Smallfield, of Renfrew. For several years Mr. Smallfield has published a "Fairs Bulletin" before the annual exhibition. The bulletin describes at length the special features that will be introduced in connection with the exhibition during the year, contains photographs of any new buildings, the leading officers and exhibitors, a list of the special prizes and the people who have given them and other information of this nature. Mr. Smallfield has succeeded in obtaining sufficient special advertisements for this bulletin to defray a considerable portion of the cost. The bulletin has been the means of creating a greater interest in the exhibition and of advertising it. This is a suggestion for other editors.

A few societies have held Old Boys' Reunions at their fairs with great success. They arrange committees composed of influential people in the neighborhood who correspond with the relatives of local residents who have moved away. Invitations are sent to these people to return at the time of exhibition. The town council joins in the issuing of these invitations and in the arranging for the reception of the "Old Boys." These reunions tend to create a greater interest in the fair and to strengthen one of the best features of every exhibition—its social side.

The Department of Agriculture frequently receives letters from directors of societies asking what are the powers of the honorary directors. It is asked if they are eligible to be placed on committees, and if they have votes on questions relating to the management of the society. This question is asked so often it is well that the duties of honorary directors should be thoroughly understood. Honorary directors have no right to vote at meetings of the members or directors. The directors are elected by the members of the society to conduct the business of the society and the responsibility of such work rests with them. Honorary directors may tender their advice, and may even sit on committees, but have not the power to vote.

THE WORK OF ONE SOCIETY.

Secretary W. H. Kerr, of the East Huron Agricultural Society, whose fall fair is held at Brussels, has furnished the following information in regard to the work of his society. This society for years has been endeavoring to present features of an educative character, and at the same time of sufficient interest to prove attractive to sightseers. It has given prizes for the past eight or ten years for field root competitions in which half acre plots of mangels and turnips are judged on the farms of competitors, with prizes for each of $2.50, $1.50 and $1.00. Poultry demonstrations and lectures have been given by Mr. F. C. Elford, now of Ste. Anne de Belleview.

Apple naming by children under sixteen years has been a feature for a number of years, the competitors naming the fruit on the first afternoon of the fair under the direction of the judge. Boys have designated twenty varieties correctly.

Last year judging of thoroughbred young cattle by boys was added. The various points were marked on a card by each boy and afterward submitted to the judge who criticised their work and awarded the prizes. There were twelve competitors and ten of them selected three of the animals wining the tickets given by the expert judges. It was a matter of no small interest on the afternoon's programme. Foot races for children have been held with no lack of entries. Club swinging exercises have succeeded and last year the society offered three awards for the best fancy drill presented by sixteen school pupils. Ethel Public School carried off the honors with twenty-five scholars, and the drill was the prettiest feature of the day. It was enthusiastically cheered by the immense crowd. It was given on the track in front of the grand stand, to the accompaniment of a brass band. Teachers and pupils were admitted free to the park and in addition to a prize of $5.00, were generously treated by their admirers. The drill was splendidly done. "We are more convinced than ever of the beneficial results of this class of attractions," writes secretary Kerr, "as compared with "midway" presentations. This year we hope to enlarge and improve on our very satisfactory experience of 1905. The first evening of the fair we have had children take part in vocal and instrumental music and recitation. We always have a big concert on the evening of the second day."

STANDING CROP COMPETITIONS.

Excellent work can be done by societies through offering prizes for the best standing crops of grain and vegetables. Competitions of this kind

necessitate the incurring of more expense for the judging than is the case when prizes are offered simply for exhibits of grain and vegetables at the fall fair, but they are invariably productive of more good. It not infrequently happens that the people who win prizes at agricultural exhibitions on exhibits of grain and vegetables are able to do so because their exhibits are not really representative of their full crops. For this reason prizes offered for the crops as they stand in the field reach the persons best entitled to receive them. To ensure the grain and vegetable department at the fair not being neglected some societies insist that the winning competitors in the standing crop competitions shall make an exhibit of a specified size at the fall exhibition before they will be entitled to receive their prizes.

In the conducting of apple naming competitions for boys it is customary for the directors in charge to select two apples of as many varieties as may be deemed advisable and to mix these apples in a heap. The competitors, later, are brought, one by one, and asked to sort these apples out placing them in pairs correctly. Often the competitors are required to give some information in regard to the characteristics of each variety. The competitors picking out the largest number of apples correctly and giving the most information concerning them win the prizes.

A school children's competition that has not been tried at many exhibitions in Ontario, but which is easily arranged and a strong drawing card, is to offer prizes for the class of children singing the best in front of the grand stand. It is customary to have one song which each class must sing and to allow the classes to select and sing one song of their own. This feature is improved sometimes by requiring the classes of children to drive to the grounds in decorated waggons. The waggons containing the children drive on the track in front of the grand stand, where the singing takes place. A nice prize for the victors is a framed photograph of the competitors, which can be hung in the school room.

A number of societies make considerable money each year by holding a concert the evening of the first day of their fair. The concert need not be held on the exhibition grounds, frequently a hall in the town or village is utilized. When one successful concert has been held it is an easy matter to make similar events a profitable source of revenue annually for the society.

First Annual Report

OF

The Horticultural Societies of Ontario

For the Year

1906

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
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1907

WARWICK BRO'S & RUTTER, LIMITED, PRINTERS.
TORONTO.

To the Honorable WILLIAM MORTIMER CLARK, K.C.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOR:

I have the pleasure to present herewith for the consideration of your Honor the Report of The Horticultural Societies of Ontario for the year 1906.

Respectfully yours,

NELSON MONTEITH,
Minister of Agriculture.

TORONTO, 1907.

THE ONTARIO HORTICULTURAL ASSOCIATION.

OFFICERS FOR 1907.

President ..... W. B. Burgoyne, St. Catharines.
1st Vice-President ..... Major H. J. Snelgrove, Cobourg.
2nd Vice-President ..... R. B. Whyte, Ottawa.
Secretary-Treasurer ..... H. Bronson Cowan, Toronto.

Directors:

Jas. Guilfoyle, Collingwood; Robt. Woodroofe, Woodstock; A. Alexander, Hamilton;
J. T. Rose, Brantford; W. Jeffers Diamond, Belleville; H. R. Frankland, Toronto;
Rev. A. H. Scott, Perth.

Auditors { ..... J. O. McCulloch, Hamilton.
..... H. A. Hesson, St. Catharines.

DELEGATES IN ATTENDANCE.

Among the Delegates, from Horticultural Societies, who registered, were the following:—

Name of Delegate.	Society.	Name of Delegate.	Society.
W. B. Burgoyne	St. Catharines.	M. Dawes	Woodstock.
C. L. Stephens	Orillia.	R. Jarvis	Bowmanville.
C. W. Schierholtz	Elmira.	D. H. Price	Aylmer.
Wm. Hartry	Seaforth.	W. T. Macoun	Ottawa.
D. S. Macdonald	Kincardine.	R. B. Whyte	Ottawa.
S. Short	Ottawa.	James Guilfoyle	Collingwood.
A. T. Armstrong	Millbrook.	W. R. Woodroofe	Woodstock.
A. T. Rose	Brantford.	J. M. Dickson	Hamilton.
W. Jeffers Diamond	Belleville.	H. J. Snelgrove	Cobourg.
Rev. A. H Scott, M. A	Perth.	W. E. Smallfield	Renfrew.
Wm. Rodbourn	Belleville.	J. Kneeshaw	Hamilton.
R. Walter Brooks	Brantford.	C. A. Hesson	St. Catharines.
A. E. Boldrich	Stirling.	A. Alexander	Hamilton.
Andrew Hill	Orangeville.	J. Thomas Murphy	Simcoe.
J. G. Jackson	Cobourg.	J. O. McCulloch	Hamilton.
James S. Scaeff	Woodstock.		

ONTARIO HORTICULTURAL ASSOCIATION.

ANNUAL MEETING.

The first annual meeting of the Ontario Horticultural Association was held in Toronto, on November 9th, 1906. The first convention of delegates from the horticultural societies of Ontario was held in Toronto in November, 1904. At this meeting a committee, composed of Messrs. H. J. Snelgrove, of Cobourg (chairman); R. B. Whyte, of Ottawa; H. R. Frankland, of Toronto; Alex. McNeill, of Ottawa; D. C. McClew, of Deseronto; J. G. Jackson, of Port Hope, and H. B. Cowan, of Toronto (secretary), was appointed to consider the advisability of forming a provincial organization to represent the horticultural societies of Ontario. This committee presented its report at a second convention of delegates from the horticultural societies of Ontario, held in Toronto on November 13th, 1905. At this convention it was decided to form a provincial organization, to be known as the Ontario Horticultural Association, and provisional officers were elected. It was the first annual convention of this Association that was held in Toronto on November 9th, 1906. Delegates were present from almost all parts of older Ontario, and much enthusiasm was evinced in the proceedings. It was the unanimous feeling of those in attendance that the Ontario Horticultural Association would prove of great benefit to the horticultural societies of Ontario.

PRESIDENT'S ADDRESS.

W. B. Burgoyne, St. Catharines.

I am very glad to meet you at this meeting of the Ontario Horticultural Association. Through the year that is past and the year that has preceded there have been some great changes made in the work of our horticultural societies, so far as their relation to the Government and to the Province is concerned. Some very radical changes have been made, which all tend, I think, to the improvement of our work and to the bettering of the horticultural societies of the Province.

Early in the spring a committee representing this association met in the secretary's office at the Parliament Buildings, and drafted a constitution and discussed matters relating to the future of the association. It was felt that the association should be modelled largely on the lines of the Ontario Association of Fairs and Exhibitions, which represents the agricultural societies of the Province. A copy of the constitution of that association was secured, and the constitution that is to be submitted to you to-day was drafted largely along the lines of that constitution.

The discussion that took place at the last annual convention, held in Toronto, when matters pertaining to the horticultural societies were discussed, was reviewed carefully, and it was decided to have a committee interview Hon. Mr. Monteith to ask for legislation along the lines of the resolutions passed at that convention. A committee, composed of your president, Mr. F. R. Frankland, Major H. J. Snelgrove, Mr. Jeffers Diamond, and your secretary, waited on Mr. Monteith, and presented the following requests:

First. That horticultural societies be separated in a new Act from agricultural societies, and that they receive their grants on a separate basis.

Second. That the method of distributing the Government grant be changed, and the grant apportioned to the societies partly on a membership basis and partly in proportion to the amounts they expend for horticultural purposes.

Third. That horticultural societies be prevented from expending any of their funds in connection with the work of agricultural societies.

As those of you who have examined the new law will see, all our requests on these matters have been granted. When interviewing Mr. Monteith, we informed him of the establishment of this association, and pointed out how difficult it would be for our horticultural societies to bear the expense of sending delegates to these annual conventions. We asked that societies be allowed a special grant to defray the cost of sending delegates, this special grant to be regulated in proportion to the mileage travelled by the delegates. This request has not been granted. It was pointed out by the Department that, were it granted, it would create a precedent, and that it would lead the way to all the other Provincial organizations asking for similar consideration.

This fall a committee, composed of Mr. Snelgrove, your president, and secretary, again waited on Hon. Mr. Monteith, and made two requests. First, that the Department assist your Provincial Association by making it a nominal annual grant of $100 a year, to help defray the cost of securing speakers for the convention, and other incidental expense. Second, that the Department print a report of our annual convention, this report to be distributed among the members of the horticultural societies in the Province. It is a pleasure to me to be able to report that both these requests have been granted. We, therefore, now are free from the haunting fear of lack of necessary finances, at least, and are in a position to do excellent work in the future.

I think we can congratulate ourselves upon the improved condition of matters as they pertain to horticultural societies. We are, for the first time, standing on a platform of our own, and we are to work out, as it were, our own salvation. Any one who has followed the work of agriculture and horticulture during the post few years will acknowledge the growing importance of the w rk of the horticultural societies in the urban municipalities of the province, and now that our horticultural societies have been separated altogether from the agricultural societies there is a better future before us. I trust that our proceedings to-day will be harmonious, and will have very profitable results, as they pertain to the future of our work.

DISCUSSION ON PRESIDENT'S ADDRESS.

Major H. J. Snelgrove, Vice-President, Cobourg: I am sure I voice the sentiment of all the chivalrous members of this association when I say we are delighted to see a lady delegate present at the first annual convention of the Ontario Horticultural Association. It is with peculiar pleasure, Mr. President, that I congratulate you upon your address, and the very satisfactory way in which you have performed your duties in the position to which we appointed you at our inaugural meeting last year. Although we have not the resources at our disposal to do a great deal, yet I think we have succeeded in doing, under your presidency, very nearly all that was mapped out or expected for us to do. We have drafted a constitution which, as you remarked, is very largely modelled upon the lines of the Ontario Fairs Association, which is a very efficient and helpful association to the agricultural societies, and we trust that this central association will be equally as helpful to our associate societies, the horticultural organizations of this Province.

The constitution will be submitted for your consideration by the executive and considered clause by clause. I want to say in passing that although I am not a believer in coercion or compulsion except under the form of the Law, yet I think that every horticultural society in this province should be required to send representatives to this central convention, (Hear, hear), because we are out to do the greatest good for the greatest number, and it is only by a happy combination and co-ordination and co-operation that we can hope to succeed.

The legislature of this province grants a large sum of money to these societies, and they should, I submit, deem it in their interests to be represented at this meeting which is a clearing house of ideas, which should go down to all the associate societies through their representatives. We trust to make these meetings so profitable and so interesting and helpful in every way that it will abundantly repay these societies for the very small outlay of sending representatives here in the way of their railway fare and other small expenses. The president has referred in his address, to the deputations which waited on the Honorable Minister of Agriculture. I want to say that Ontario has been very fortunate indeed during the past quarter of a century in having remarkably able men filling the important post of Minister of Agriculture in this province. In the late administration there was no abler statesman, no man who did more for the development of agriculture in all its branches and for the creation of the wealth of this province, than the Hon. Mr. Dryden, and I am glad to be able to say, as an old Liberal, that in the present Minister of Agriculture, the Hon. Nelson Monteith, we have an equally able and progressive gentleman, who is ready at all times in the most affable and agreeable manner to meet the representatives in the great interests of his department (hear, hear), and with a keen ear to the ground he is always ready to catch any suggestion that may be made for the benefit of our societies. I will say that during the different sessions that we had with Mr. Monteith we were delighted to find that we had his cordial sympathy in the organization of this Ontario Horticultural Association, and while he did not grant us all that we asked, yet we felt that he was granting all that he was able to give, and he told us that he considered that there was a great work before this association in cultivating, among our urban populations in our towns and cities and incorporated villages, the æsthetic side of life, and that is where our great field lies. I do not wish to encroach upon what my good friend, the secretary, Mr. Cowan, will shortly introduce to your attention, but I want to give him notice before he takes up the new act, that there are one or two little things that I would like to call his attention to and ask him to deal with. One is the requirement that a society shall not expend more than one-third of its total receipts in any one of the lines of work mentioned. But what are these lines of work? They are as follows: By holding meetings for discussion, for hearing lectures on subjects connected with the theory and practice of horticulture, by holding exhibitions and awarding premiums for the production of vegetables, plants, flowers, fruits, trees and shrubs; by the distribution of seeds, plants, flowers, bulbs and trees in ways calculated to create an interest in horticulture; by promoting the circulation of horticultural periodicals; by encouraging the improvement of home and public grounds; by the planting of trees, shrubs and flowers, and by otherwise promoting outdoor art and public beauty; by offering prizes for essays on questions relating to horticulture; by importing and otherwise procuring and distributing trees, plants, flowers and seeds of new and beautiful kinds.

Since our inaugural meeting last year this act, respecting horticultural societies, has been placed upon the statute books of this province. It is our charter of rights, and I am delighted to know and to point out to you that the objects of the horticultural societies have been so splendidly enlarged. Our scope of operation has been extended by the Minister in this act, but when he required that not more than one-third of our income shall be expended in any one of these different objects, that is a limitation that possibly will be found difficult to work out. Regarding the regulation that or or before the first day of May of each year the officers of each society shall send to the Department an affidavit setting out the exact financial transactions of each society and the membership, etc., I would suggest that that should be extended until it reached the first day of June, because, speaking for Cobourg Society, it would be almost impossible for us to have our list of members completed by that date. Those are two little matters, and I think the act is almost perfect with those two exceptions that I submit to your consideration. I shall not take up any further time Mr. President; I think you have very correctly stated the work of the executive during the past year. I think that we are to be congratulated upon what we have achieved, and before I sit down I want to pay a well merited tribute to our worthy secretary, Mr. Cowan. (Hear, hear). As we all know he is one of the busiest men in the Department of Agriculture, but he is fortunately gifted with that rare genius for organization work in detail that enables him to do a great deal of work and do it well in a very short space of time. I found him very courteous and very courageous and tactful and helpful in our work during the last year, and it is a very fortunate thing that we were able to secure his services as secretary of this association. He has been a great help to us; he has put us next to the Minister and secured concessions that we hardly expected to receive at the commencement of the year. We have a great constituency to develop; we have nearly one hundred horticultural societies already organized, but until we were constituted last year they were practically without any cohesive bond of union. We are perhaps to furnish this bond of union. We have a membership of nearly seven thousand. Now, these societies, and these members, we are all prepared to admit, in most cases have not been doing all that they should have done in the community in which they operate. We want to help them by mutual advice and assistance to be more beneficial in the future, and I want to say in closing that I don't think anything fits the case better than the beautiful lines of that poet of Nature, Whittier, when he said:

"Give fools their gold and knaves their power
Let Fortune's bubbles rise and fall,
Who sows a field, or trains a flower,
Or plants a tree is more than all.

For he who blesses most is most,
And God and man shall own his worth
Who toils to leave at his bequest
An added beauty to the earth.

And soon or late to all that sow
A time of harvest shall be given,
The time the flower and fruit shall grow
If not on earth at last in Heaven."

That is the work we are hoping to inaugurate in this province. (Applause).

CONSTITUTION OF THE ONTARIO HORTICULTURAL ASSOCIATION.

The Constitution was then introduced by the secretary and taken up clause by clause. After careful consideration and making several changes, the constitution, as amended, was adopted, it being understood that an amendment, providing for a geographical distribution of the board of directors, would be introduced at a later meeting.

1. This Association shall be known as the Ontario Horticultural Association and any horticultural society in Ontario shall be eligible for membership upon the payment of $2 per annum, and the delegates from such societies only shall be allowed to vote.

2. The primary objects of this association shall be to advance the interests, promote the welfare, increase the usefulness and supplement the efforts of all horticultural societies in the province. An annual meeting shall be held in Toronto, at such time as the executive may decide, and to this meeting each horticultural society in the province shall be invited, one month in advance of such meeting, to send delegates for the purpose of discussing matters of general interest, methods of management, special features of society work, lectures and reports for educational circulation, and for making such recommendations to the Honorable, the Minister of Agriculture for Ontario as may be deemed best in the interests of all societies. Each society shall be entitled to be represented by two delegates, and any society having a membership exceeding 100 shall be entitled to additional representation in the proportion of one delegate to each 100 or fraction of 100, members over the first one hundred.

3. The officers of the Association shall consist of a president, a first and second vice-president, a secretary-treasurer, seven directors and two auditors. The Board of Directors shall appoint from among themselves an executive committee, to consist of the president the secretary, and not more than three directors, and of this committee three shall form a quorum.

4. The president, the two vice-presidents, the secretary-treasurer and the directors shall constitute the board of directors.

5. The president, or in his absence one of the vice-presidents, shall preside at the meetings of the Association, and of the board of directors. In the absence of both the vice-presidents, the members present may appoint their own chairman.

6. The officers shall be elected by nomination and by ballot at the annual meeting, for one year, and shall hold office until their successors are elected.

7. Vacancies in office shall be filled by the executive committee.

8. The Board of Directors of the Association shall have power to call a special meeting of the Association whenever they deem it advisable. Notice of all special meetings, with a statement of the subjects to be discussed, shall be sent to all societies, at least one month previous to the date of said meetings and such subjects only shall be passed upon.

9. At the annual meeting or any special meeting of the Association twelve members or delegates shall constitute a quorum for the transaction of business.

10. The Board of Directors, between the sessions of the Association, shall manage its affairs, and report its transactions to the annual meeting, and five members of such board shall constitute a quorum for the transaction of business.

11. The constitution and by-laws may be amended, revised or repealed by a majority of the members present at any regular annual meeting, provided a notice of motion of such proposed amendment has been given at the previous annual meeting. All notices of motion not given at the annual meeting shall be forwarded to the secretary not later than two months before the date of the annual meeting.

12. The executive shall prepare a programme or order of business previous to calling the annual meeting and a copy of such programme shall be sent to each society at the time notice is given of such meeting.

13. The order of business of the annual meeting shall be as follows: Reading of minutes of the previous meeting, receiving report of standing committees, receiving report of select committees, reading communications and appointing committees. The first part of the afternoon session shall be devoted to unfinised business, new business, committee reports, treasurer's statement, and the nomination and election of officers.

On motion of Major Snelgrove it was decided that the constitution and by-laws should take effect forthwith, and the secretary was instructed to notify the secretaries of the horticultural societies that they would be expected to pay an annual fee of $2 for 1907, and send in a statement showing their membership on or before the first day of May, 1907.

DISCUSSION OF THE NEW ACT GOVERNING HORTICULTURAL SOCIETIES.

Superintendent H. B. Cowan: It is with both pleasure and regret that I rise to speak to you on the subject of the new act governing our horticultural societies. It is with pleasure, because I feel that we have accomplished a great deal within the past few years, and it is with regret, because, before long, I expect to retire as superintendent of horticultural societies, and I believe that this is the last meeting at which I will be associated with you in my present capacity. Before I undertake to explain this new act it will be necessary for me, if you are to have a clear understanding of the act, to show what has led up to it, and I would like to trace a little of the agitation for improvement we have conducted.

When I first came into office about two years and a half ago, I started to find what was the position of the horticultural societies of the province. I found it was very unsatisfactory. I realized that there were certain lines of work that it would be well for the different societies to take up, and when I started to advocate them it became evident that there were some societies who could not adopt them owing to the peculiar situation in which they were placed. These situations were due to the act under which our horticultural societies were working, and it became evident that before our societies could do the work that we wanted them to do, and that they were organized for, we would have to get right to the root of the matter by getting everything completely reorganized, our societies placed on a more satisfactory basis and working under an act of their own.

One of the first defects I found was that our societies had no central organization. There were no persons to whom I could go, except to individual officers of individual societies, to talk to about matters relating to the work of the societies. In other words, you had no provincial organization such as this is. I should make an exception; you were, to a certain extent, identified with the Ontario Fruit Growers' Association. It was a peculiar situation. The Fruit Growers' Association owned *The Canadian Horticulturalist*, and they thought that it would be a good thing for the fruit growers if they could get the horticultural societies to take *The Horticulturist* and thus swell their membership and its subscription list. They decided that if they were going to succeed they would have to make members of horticultural societies who subscribe for *The Canadian Horticulturist*, members of the Ontario Fruit Growers Association as well, and also give them some representation on the board of the Association. This they did, and when I came into office the only form of organization representing the horticultural societies that I could find was that some directors of the Fruit Growers' Association were representatives of horticultural societies. I found that at some meetings of the Fruit Growers' Association they had arranged for discussions on horticultural subjects, but in most cases the horticultural societies had been neglected by the Fruit Growers and but scanty attention was given their interests. However, they had some good

representatives on the directorate of the Fruit Growers' Association in the persons of such men as Mr. Whyte of Ottawa and one or two others. That situation struck me as being very unsatisfactory, and I felt that we needed a separate organization to represent the horticultural societies. Then, you had no annual report. I had nothing by which I could find what lines of work the different societies were following. Only by writing to the societies separately was I able to ascertain what they were doing. Only a few societies, through the medium of the press, knew what the other societies were doing.

Then came the act; it was very unjust the way it was worded, as it pertained to the horticultural societies. In the first place the basis of distribution seemed to be wrong; it provided for fixed grants to the different districts and the sum provided was distributed among both the agricultural and horticultural societies. Some societies were getting large grants and other societies, doing much more valuable work were not getting anywhere near as much assistance. Another serious objection was the fact that by being associated with the agricultural societies it had created in some sections a feeling between the agricultural and the horticultural societies. In some cases the agricultural societies did their best to block the organization of horticultural societies. For instance, in the town of Cornwall they could not form a horticultural society because the agricultural society would block it and say, "If you form it, part of our grant will have to go to that society." In other cases the directors of the agricultural societies were, perhaps, a little more shrewd. They organized a dummy horticultural society, and took the grant of the horticultural society and turned it into the agricultural society. This has meant that there have been places where we needed societies and didn't have them, and other places where we had them where they have been of little use. For instance, some of our city societies have not been fairly treated. In Toronto where we should have a large and flourishing society, the society has been getting a grant of $140. There has been in Toronto, what I might call a dummy agricultural society, a society that has never held an exhibition, and that has been drawing a government grant, and it has prevented the horticultural society getting its just grant and doing the work it should. These were some things brought to my attention when I took hold. There were, also, some defects in regard to the agricultural societies, and the minute it came to suggesting that we should make a change it became a difficult matter to move.

The first step taken was to call a meeting of delegates from the horticultural societies. That was held practically two years ago in the Parliament Buildings. It was at that meeting that the suggestion was first made that we should form an Association of this kind. It was vigorously opposed in some quarters, its opponents including directors of the Fruit Growers' Association, who did not see the need of another organization, and who said it would be duplicating their work, and so forth. The most we were able to accomplish that first year was to get a committee appointed to consider the advisability of forming such an association as this. That committee was appointed to wait on the Minister of Agriculture and draw attention to some of the defects in the act that I have mentioned. That committee met and reported to you last year, and that was when your preliminary association was established. Last year we discussed, also, the main clauses of the proposed act. Your association, as you will probably remember, endorsed most of its clauses, namely, that horticultural societies should be placed on a basis of their own, that a special grant should be made to them, that they should be separated in the act from agricultural

societies, that the giving of practically fixed grants should be abolished, that societies should, receive their grants according to what they gave for horticultural purposes and to their membership. As your president has reported, your committee waited on the Minister of Agriculture and those clauses have been embodied in the new act.

Now, as regards this new act, I do not consider it perfect and fully expect that you will be able to point out defects in it and make suggestions. We cannot change it as we can our own constitution, because it is too important a matter. Every change must be given the most serious consideration, and we must be very nearly unanimous in regard thereto. However, we want to get the views of all present on any debatable question. The outstanding features of the act I have already referred to. I presume the best way for me to do is to take up the act, possibly not clause by clause but the most important ones, and explain them. In drafting this act we kept the old act before us, and embodied many of its clauses which stand exactly as they were before. You will notice clause five says "The Minister may appoint any person or persons to inspect the books of any society." That is taken from the old act, and it was included in this Act with this object: Some fear was expressed that some societies might make out that their horticultural expenses were larger than they were and to prevent this it is possible for the Department to make an inspection of the books of any Society. In the mode of organization there is a change from the old act; in the old act it was stipulated that thirty people, where the rate-payers were two hundred or less, and fifty where they were over, could form a Society. The new clause reads as follows: "A declaration . . . the number shall be at least fifty." In drafting that clause we consulted the reports of the societies in all parts of the province and I may say I discussed practically every clause of this act with leading officers of horticultural societies and we came to the conclusion that that was a pretty fair basis of distribution. The next change is where it reads: "the first meeting of the horticultural society shall be held during the second week in January next ensuing." In the old act it is stipulated that the organization and annual meetings must be held on the third Wednesday in January. This change gives the society greater laxity and allows it to select any day in the week. In the old act is was required that notice of the meeting must be given by a placard and bills. We have left that out of this act. The next change is where it reads: "The Board of Directors from among themselves or otherwise shall elect a secretary or secretary-treasurer who shall remain in office during pleasure." That is a new clause. This system has worked out satisfactorily in connection with several of our other associations. The secretary is the man who has to take the brunt of the fighting, and the kicks, etc., and it is well to give him a free hand as far as possible. Some of the sore heads will perhaps get up in meeting and try to get even with him, whereas if the secretary is to remain in office during the pleasure of the Board of Directors, he is responsible only to the Board of Directors, but they have power to deal with him.

The objects of the horticultural societies in the main have been redrafted from the old clauses with some slight changes and one or two additions. I would like to draw your attention specifically to the broad field of work that is provided for our societies. In the case of our agricultural societies, they were organized for special purposes but they almost every one have got down to simply holding an exhibition. We are endeavoring to guard against our horticultural societies getting into a rut in the same way. A new clause is the one commencing, "By encouraging the improvement

of home and public grounds." Major Snelgrove is largely responsible for that clause; it allows a new line of work for our societies and one which some of our societies have been already following to excellent advantage. One of the debatable points is the clause which reads, "A Society shall not expend more than one-third of its total receipts in any one of the lines of work mentioned." In the case of some of our societies there has been a tendency for them to become almost a close corporation, and to expend perhaps too much of their funds in buying plants and shrubs for their members. They have been drawing a government grant, and it has been felt that there should be some safe-guard to prevent such things being carried to extremes. In other cases societies have centred all their efforts in the holding of one exhibition, and that has been the end of their work. In various ways of that kind societies have gone to extremes. It was felt that if societies were not allowed to expend more than one-third of their total receipts for one purpose it would make it compulsory on them to undertake a wider line of work. I have been already discussing that point with some of those present. For instance, in the matter of holding exhibitions some of our societies, like St. Catharines, hold monthly exhibitions in the summer and make a success of it. The expenses in connection with these exhibitions would be taken as the regular running expenses of the society, and the money paid out in prizes at the exhibitions as the money spent for that line of work. A society is free to expend one-third of its total receipts in prizes at such exhibitions. I trust you see the point I am trying to make.

A Delegate: You could hold an exhibition every month and a third of the expenses each month.

The Secretary: No; supposing the total receipts of a society were $300, and it held a series of exhibitions, it could expend a $100 in prizes at the exhibitions. The expenses of the exhibitions would be counted as the regular running expenses of the society.

Mr. Diamond: It must be the whole year.

A Delegate: Would not exhibition expenses be charged to the exhibition?

Secretary: The expenses of the exhibition would be considered part of the regular running expenses of the society. It is left to the interpretation of the Department: that is the way I understand the Department will interpret the act.

Mr. Diamond: The only trouble I see is the difficulty in getting at the third in each department because the whole amount cannot be ascertained until the work is completed. In other words, you could not spend the third of your money, because you would not know what the Government was going to give you.

The Secretary: That is a point I will touch on a little later.

Mr. Whyte, Ottawa: In the case of contributions from outsiders—for instance, we have a member who gives us $55 a year for special prizes; would that be counted part of our share?

The Secretary: Part of your total receipts.

Mr. Whyte: I do not think the government has anything to do with what we get from outside people. That is a donation; this man gives that money for a special purpose, and we have nothing to do with that. All the department can regulate, it seems to me, is the grant and our members' subscriptions. If we go round to half a dozen people and get a grant for our exhibition, I don't see why we should be penalized.

The Secretary: That is a proper question, but one on which the Department has found it necessary to take a decided stand. For instance take

horse-racing at agricultural exhibitions; a society raises money for horse-races entirely independent of the society, and claim that they can do as they like with it. The Department has found it necessary to say that no society receiving money from the Government shall hold horse-races at their exhibitions, no matter where they get the money. The principle comes in there and it is the same here.

Mr. WHYTE: Then we should not put that in the accounts at all?

The SECRETARY: Take the case of the Hamilton Society; they raise large sums of money for special exhibitions. They may hold a big exhibition and spend a large sum of money on it. Of course that is an exceptional case; and one way for that society to avoid this clause would be by having a sub-committee or a special organization to handle that exhibition leaving the horticultural society to conduct the regular work of a horticultural society. This act has to apply to the societies as a whole, and there are bound to be some clauses in it that may fall hard on a few societies.

Mr. R. B. WHYTE: We will have to decline to take this money.

Mr. DIAMOND: It seems to me we have to make an annual report, and the auditors have to audit it; it must show all the receipts during the year whether special or anyway else, otherwise we would be virtually evading the Law, and I think we cannot make an exception of that kind. We will have to make an honest report to the Government as to the money received and the money expended, no matter where it comes from.

Mr. DICKSON, Hamilton: The speaker has put the matter in a new light. In Hamilton we have had to raise a little money. One gentleman gave us $50 to help in our prize list, and a good many more gave us $25. If we put only one-third of our receipts into our prize list I do not see how we can collect that money. Our total receipts from the Government and our own members would not amount to more than $525, and if we held an exhibition and went around with the hat and got these contributions from our friends they would give more than our total receipts from outside sources, and how would we be tied down with that money?

Mr. STEPHENS, Orillia: I believe that clause will knock out altogether the holding of exhibitions by horticultural societies. I do not see how it is possible with one-third of their income to hold an exhibition of any kind and give prizes. In Orillia we have carried out the act, but we have spent the greater part of our money in exhibitions.

Mr. W. T. MACOUN, Ottawa: The giving of this special prize by our Ottawa member is to encourage horticulture just as is the Government grant. He pays the winner by cheque. The individual show that wins his special prize is one of the features of our exhibitions, and if that clause stands we shall have to cut out this special feature of our summer exhibitions, five in number.

C. W. SCHIERHOLTZ, Elmira: I do not see any objection to a society raising money in that way and using it, as long as they get no Government grant and societies do not lose by money that is raised that way. If they are fortunate enough to have a few rich men in their midst who will give perhaps $50, $100, or $200, and then they bring that in their report as having spent so much more money, and the Government grant will be based on that, then other societies will lose by it, but if it can be fixed that way that other societies do not lose by it. I do not see any objections to their doing that.

The SECRETARY: Here is a point: take the case of the Ottawa Society. For a number of years Lady Minto and now Lady Grey conducted Garden Competitions more or less in conjunction with the society. That expenditure has been shown up, as I understand it, in the Horticultural Societies

expenditures. In the same way Mayor Ellis has given prizes for school children's work. Has that appeared in your expenses, Mr. Whyte?

Mr. WHYTE: No.

The SECRETARY: We have a large number of societies in the province, at any rate we have two or three to which that may apply unjustly, but it is important that that clause should remain there to prevent these societies getting into ruts. In the case of these one or two exceptional societies I do not see why such conditions as they speak of could not be overcome on such lines as the Lady Minto prizes. Take Hamilton: they have another organization there that has offered prizes for the best garden, and that society has done excellent work. If that society has done that other line of work could not members of the Horticultural Societies hold a bigger exhibition and raise funds on the side independent of the society's work?

Mr. WHYTE: It could by getting them to limit one-third to the grant and members' fees. That would be fair and reasonable. What earthly business is it of any other society if a society undertakes to collect a lot of money for a special exhibition? It does not affect them, but it means a great deal to that society.

Mr. GUILFOYLE: I think we should remember that the grants paid hereafter are different from those paid heretofore. Heretofore they were only on the membership; hereafter they will be on the money obtained from all sources. The temptation will be to spend more because the grant will be greater.

Mr. REID: Could it not be arranged where societies can obtain special prizes to give them the privilege of using that money without interfering with the Government report. Let it be done in the name of the Horticultural Society; probably it would not be convenient as you suggested to have some other society handle this. They could probably do it better in every way and that should not be included in the Government report. Have that a special feature only, but handled by the society.

Mr. WHYTE: Keep the special prizes out of the Government report altogether.

The SECRETARY: I do not see any objection to that.

Mr. WHYTE: In this prize of $75, the gentleman who gave it especially stipulated that it was not to go into our general funds.

The SECRETARY: As long as it does not appear there it is all right.

Mr. DIAMOND: I suggest, while we are discussing this, that there ought to be a special committee appointed to meet the Government on some unanimous plan. We are wasting a lot of time; we cannot alter that, and a special committee could formulate it if we can get up a unanimous report to send to the Government. I think we are wasting time trying to change an Act of Parliament.

The SECRETARY: We cannot do that until we discuss it here and get the views of the members. That is what we are trying to do.

Mr. DIAMOND: The committee could bring a report here and we could discuss it.

Mr. ALEXANDER, Hamilton: I think the whole matter is very simple; the suggestion made by Mr. Whyte just now I think covers the whole ground. The Hamilton association has collected extra money, they have had exhibitions, but every cent of money that has come into our treasury has been acknowledged to the Government, including all the extras every year. Several societies have not done this, and therefore I think that the Act in this clause about the division of the money should be taken as hinted by Mr. Whyte, that it should include a third of the Government grant and

the membership fees, that is, the regular income of every society, and I think that is reasonable, and if that were done with that there is no other alteration required in that clause—if it is understood that the third referred to there is a third of the Government grant plus the membership fee, which is the regular income of every Horticultural Society. We can have no idea at all what our income will be until we have resolved to hold an exhibition, and ask our friends to help us to get up an exhibition, to make a reasonable prize list so that the exhibition will be a success. We have always lost with our exhibitions; the last we had cost us $200 in addition to what we collected. I think the whole morning seems to have been taken up with talk that I think could have been very well done in committee, and I think if we would agree upon that understanding of Mr. Whyte the Government would consider it.

The SECRETARY: This seems to be a clause objected to most strongly simply by city societies, and I suggest that the members of city societies get together and try to formulate something. It is important that this should not be changed as regards societies as a whole.

Mr. BURGOYNE: The act was passed after many of the societies laid out their plan for the past year. The act was not passed by the Legislature till along in May, and does not come into effect until 1907, so that it should not affect the societies' work of this year; they could not alter their plans in accordance with legislation they knew nothing about. It seems to me we could reach a conclusion by waiting upon the Government and the Department, that this clause shall not affect the grant of next year no matter what societies may have expended this year, and then meet the committee and consider the matter and arrange on some basis for the administration of that.

The SECRETARY: The next clause is: "No society shall hold an exhibition in connection with the exhibition of an agricultural society or societies." That is a clause that is taken exception to by some societies.

Mr. STEVENS: What will that mean exactly?

SECRETARY: It means that a horticultural society cannot offer premiums at an agricultural exhibition, in the same building at the same time. There are two or three reasons for that. We discussed this at our meeting a year ago and were practically unanimous on it. As past experience has shown, if there is a loophole left open, the agricultural societies are going to try to get hold of the funds of the horticultural societies. That does not mean that an agricultural society cannot offer prizes for horticultural purposes. The act for agricultural societies gives an agricultural society power to offer prizes out of its own funds for horticultural purposes, but it shuts the door to an agricultural society doing as they have done before, electing a majority on the board of a horticultural society getting its funds, and turning them into its agricultural exhibition. We want to keep the two societies distinct; let each work on their own basis.

The SECRETARY: The method of calling meetings has been slightly amended. Some places thought that they would prefer to send notices by registered letter to their members instead of the old way and we have left the way open for them to do it if they want to. In some cases the advertisements required in the past would cost a good deal more than the registered letters would; for instance, if a society finds that it would be too expensive to put an advertisement in the papers and also get out placards and bills to put around, they can send notice by registered letter to each of their members.

Mr. DIAMOND: Does that say how many notices in the paper?

The SECRETARY: No it says "Shall be given by advertisement in one or more papers."

Mr. DIAMOND: One advertisement would do?

SECRETARY: Yes.

PRESIDENT: That must be in conjunction with the placards.

SECRETARY: Yes; take a case like the Toronto or Ottawa Societies: "shall be given in one or more newspapers and also by placards." The pasting of bills around Hamilton or Toronto or Ottawa is too expensive and would not accomplish the object desired so a city society can by registered letters overcome the difficulty.

Mr. GUILFOYLE: Does the Act make it obligatory on societies to hold exhibitions annually?

SECRETARY: No; we have left out of this act the power horticultural societies have had to hold land. There are three societies in the province that are, to all intents and purposes, agricultural societies, and there will have to be an adjustment in regard to them.

The SECRETARY: A change has been made in the clause that requires that: on or before the first day of May each year each society shall make an affidavit as to its membership. It used to be the first of September. The idea in changing the date to the first of May was to make it possible for the Department to distribute the grants several months sooner. The affidavit is required to show that the society is a working society before it shall receive the grant.

Mr. WHYTE: In all eastern societies that should be June. The first of June our membership roll is complete, but by my recollection we get about a third of our membership the first two or three weeks in May.

A VOICE: It is the same all over.

SECRETARY: That clause has nothing to do with the amount of your grant or the number of your members: all it is required for is to show that you are in existence at that time and that you have the number of members required by law.

The PRESIDENT: It would be a hundred and twenty-five in the case of Ottawa?

The SECRETARY: Yes.

Mr. WHYTE: I understood that on that report our grant was to be based.

The SECRETARY: No, you are thinking of a clause that comes on farther. The Department wants to know that the society that made a report in January is still in existence, and has the number of members required by law.

Mr. DICKSON: May I ask if the number is fixed at eighty?

The SECRETARY: One hundred and twenty-five for the four cities with a population of 30,000 or over, including Hamilton.

Mr. DICKSON: This year we got notice from the Deputy Minister that we should make an affidavit of eighty members; previous to this we had not to do that. Are you changing this every three months or so?

The SECRETARY: No, every notice you got this year would be the same as those received in the past.

Mr. DICKSON: Excuse me, it is not so.

The SECRETARY: No change has been made in the old act, which is still in force.

MAJOR SNELGROVE: Section 17 (*a*) says this statement shall set forth plainly the number.

The SECRETARY: You are right: I am wrong here.

Mr. S. SHORT, Ottawa: I would like to ask if the Minister can over-rule the Act at any time?

SECRETARY: No. All the Minister can do is to interpret any clause in the Act, concerning which there may be doubt. He himself is governed by the Act just the same as any person else. I am wrong as regards this clause under discussion, as I see that it goes on differently to what I thought.

The PRESIDENT: That is the statement to be sent in the first of May.

The SECRETARY: Yes.

Mr. WHYTE: That is a thing we cannot do.

The SECRETARY: Mr. Dickson has put his finger on it. That statement, I take it, has an error in the date. The grant is going to be based on the annual statement presented at the annual meeting in January. This clause mentioning the first of May, I judge, must be a misprint, for on the first of May we are going to require the affidavit of which I was speaking. I will make a special note of this clause, and draw it to the attention of the Department. The clause providing that should it be found within one year of the receipt of the annual reports that fraudulent returns have been made to the Department the offenders may be punished, is taken out of the agricultural act; where we have found such things to occur.

The act provides that an amount not exceeding $8,000 shall be subject to division annually among the societies of the province. That is an increase of about $1,500 over what the horticultural societies have been receiving in the past. The sum has been increased, and it is well that you should understand that this is because it is expected that from now on more societies will be organized. Where, in the past, the opposition of agricultural societies has prevented their organization new societies are going to spring up. I do not expect that there is going to be any marked increase in the number, but some new ones will be organized. Your grants will probably drop in another year somewhat on that account. This increase in the total grant has been given largely for the new societies that are expected.

Mr. WHYTE: It is a pity it was not made to our interest to establish new societies.

The SECRETARY: We saw that defect, but could not see any way out of it. I expect this association, as soon as it finds the grants to the societies are becoming too small, will be able to show the need for more money. The more societies you have the more chance you will have to get an increase in your grant. When we came to decide how the grant should be divided we were up against a knotty problem. One of the first suggestions was that we should distribute it entirely on a membership basis, but we found that that would be unfair to smaller towns, because societies in cities could run up a great big membership by engaging special canvassers. Then we thought that it should be on the money expended for horticultural purposes. This, we found, might lead societies to become indifferent to increasing their membership and thus would restrict their usefulness. Then it was decided that $2,400 should be subject to division according to the membership in the preceding year, and $4,800 upon the amounts expended for horticultural purposes. I got a letter the other day from a society vigorously protesting against this Act. It is a society that has been holding its exhibition in connection with its local agricultural society. It describes this act as a robbery by the city societies, and unjust, and so on. I claim that if there is any unjustness about it, the unjustness falls on the city societies. Take the Agricultural Society Act: It provides $70,000 for the agricultural societies of the province, a large proportion of which is paid by the people in the cities. Out of that $70,000 the cities get nothing.

When we get back to the horticultural societies that are in the towns, villages and cities, a special grant of $800 to the city societies is not their just proportion, in proportion to the amount of taxes they pay. That has been figured out carefully, and the cities are entitled to a considerably larger amount than $800.

The PRESIDENT: Is that not a reduction from the past?

The SECRETARY: No, it is an increase. The Hamilton and Ottawa societies, and I think London, get $350. In Toronto there has been an Agricultural Society that draws an amount of about $400, which now will gradually disappear under the new Act, and its funds practically will come over and be part of the $800 given to the horticultural society. The city will be getting a little more than in the past, but not much.

Mr. WHYTE: They only get more if they work for it.

The SECRETARY: Yes. There is one more change at all important, and I think it is the only one, where it states that it will be obligatory on the societies to place their treasurers under bond, and if they do not do so and anything happens, the directors will be held responsible for any funds that are misappropriated.

Mr. WHYTE: Is there any possibility of having the clause changed to the first of June instead of the first of May?

The SECRETARY: I will endeavor to have it.

Mr. STEPHENS: Might I ask for the clause providing for the organization of this provincial society?

The SECRETARY: There is no such clause, as it was not thought necessary. There is no such clause for the formation of the Ontario Association of Fairs and Exhibitions.

Mr. STEVENS: Under what authority are we organized?

The SECRETARY: Under our own authority, a voluntary association. Possibly you desire to ask me questions; now would be the time to do it if there are any more.

Mr. GUILFOYLE: I think the explanation has been clear and explicit.

The PRESIDENT: Would it be well to appoint a committee to consider the feature that caused such a lot of discussion, with regard to the one-third clause and see if we could get at a solution of that this afternoon?

Mr. WHYTE: There is one more difficulty about that third question. When we are drawing up our financial scheme for the year what are we going to do? We do not know what our income is; we may unintentially violate that act. We are going to be punished by not getting our grant for a totally unintentional offence against the act. I think there should be a little more latitude to the individual societies. For instance, as law-abiding members of the community we are endeavoring to live up to that act, and we started last month on next year's program; we got out our premium list and are canvassing for members, and we are trying to get ready for the first of May though we would rather have it put off till the first of June. We cannot tell what our income is going to be next year within possibly a hundred dollars or two hundred dollars; we might fall short $200 of what we expect or we might go over what we expect. If we are going to be fined by losing our grant for going more than one-third on any one feature, I think it is unjust.

The SECRETARY: I have a series of questions presented by the members of the Ottawa Society. One is, "When will the grant be subject to division?" The grant may not be divided before June, after that May statement has been sent in, but your annual statements must be in the hands of the Department within a month after your annual meeting. That

will enable the Department within a month and a half if the reports come in promptly, as we intend to see they shall, to figure out the grant about the first of March to let you know what your grant will be for the next year.

Mr. Dickson: It is the same as before.

Secretary: Yes.

Mr. Guilfoyle: With the exception that we never knew what our grant would be until we received it.

Secretary: Yes, you will know about the first of March; I am taking it for granted that the societies will report promptly.

The President: A remark was made about leaving certain things out of the annual reports. I think the annual reports should include faithfully all the financial transactions of the society, and it should not be left discretionary with any society to leave out this or that or the other thing. On the faithful rendering of a report, the government could not penalize any society for the work done this year.

Mr. Diamond: Do I understand that our annual reports for this year are to be made out in January or next May?

The Secretary: In January.

Mr. Diamond: Do I understand another annual statement to be made up on the first of May?

The Secretary: That is the point I have marked to bring to the attention of the Department to have altered. Your annual statement will be presented at the next annual meeting, and your grant will be based on the statement made in January.

Mr. Diamond: There will not be two annual statements?

The Secretary: No.

Mr. S. Short: In regard to that point about everything being included in the government report, would it not be better that each society should include these exhibitions in a side report, not in the main report covering the government grant?

The President: That suggestion should be made to the Department.

The Secretary: I would suggest that the members of city societies get together and work out what would suit them best and take it up with me or with the Deputy Minister. I do not want you to encroach on or invade the act, but this is the position: The Department is not going to be too drastic in interpreting that act, if it finds you are going a little bit over the limit. If the work is justifiable no exception will be taken, but if a society is going to extremes the Department feels that it should have the power to take action. Do not look on the Department as being arbitrary.

J. T. Rose, Brantford: I may be out of order but our forces are all gathered for the school children; we gave them seeds and gave them prizes for the flowers they exhibited. We put all the money that we received into that, less our running expenses. Now, have we to take a third of that grant that we get and then use the other two-thirds for some other purpose? If we do, then we are dropping out of one of the grandest works that any institution ever took hold of.

Mr. Dickson: May I ask how much you expended?

Mr. Rose: Our Secretary Mr. Brooks, is not here at present; he has a full report of that. I am sorry he has gone out, but that has been our whole object, to get the school children, and we have got the school children. By referring to *The Canadian Horticulturist* you will see a cut of the show we had there, and it was a grand success. If you are going to bring it down to one-third you are going to cut our heads off.

Mr. Diamond: And the children's too?

Mr. Rose: And the children's too. I will not say anything more, because I may encroach on Mr. Brooks' words this afternoon.

The Secretary: If I may be allowed to say a few words in conclusion, I would like to draw your attention to what we may look to as the future of our societies. To me it seems most encouraging. The limitations with which our societies have been struggling have been removed. There is nothing to prevent their organization; there is no limit to the grant to a society, it is going to be given in proportion to the work it does. Our societies are organized; we have our provincial organization; we have a means by which we have come together to discuss these matters. The Government is going to help us; we are going to have our annual reports printed and distributed among our societies, and I feel satisfied that it is going to increase the interest of the work. Further, I feel that the future of our societies is more bright than ever before. I feel disappointed that I have not been able to do more. I wanted to get out special reports and so on, but my work has been concentrated on this act. It has been a great pleasure for me to work with you. Although I expect to step out as superintendent of societies, I do not intend to let my interest entirely cease, and I hope through *The Canadian Horticulturist* to still keep in close touch with your work and with your association. (Applause.)

Mr. Diamond: I move that a hearty vote of thanks be tendered to our secretary for the very able and instructive manner in which he has presented this act passed by the Government, and also for the very zealous manner in which he has so far conducted his work.

Mr. Whyte: I have very much pleasure in seconding the motion.

The President: I am sure, as Mr. Whyte said, that every man would like to second it, and I ask you to second it and carry it by a rising vote.

All rose and sung "For he is a jolly good fellow," followed by three cheers.

The President: I cannot add anything to the enthusiastic manner in which this motion has been carried. I think you must feel that it comes from the bottom of our hearts, and we all feel that you have earned everything we have said and manifested in the way in which we have tendered you this vote of thanks. (Applause.)

Secretary: I can thank you from the bottom of my heart for this vote of thanks, because in a way I feel that it is a pronouncement upon my work as superintendent of horticultural societies, and I feel that I can take it as a testimonial that you feel that my work has not been in vain. I assure you I thank you very heartily.

THE OTTAWA GARDEN COMPETITIONS.

By S. Short, President Ottawa Horticultural Society.

The subject I have been asked to discuss with you this afternoon is the City of Ottawa Garden Competition, their effects, and how they have been carried on. I am pleased to tell you that the effects have been beneficial, both from an educational as well as from an ornamental standpoint. Through these competitions the city of Ottawa has wonderfully improved in appearance, and is now well worthy being visited by tourists or anyone wishing to spend a day or two pleasantly and with interest. These competitions were inaugurated by Lady Minto in 1902, and carried on during 1902, 1903, and 1904.

The objects Lady Minto had in view were the encouragement of neatness and order in the keeping of grass plots and flower beds, especially where fronting the street, in the private homes of the citizens; the encouragement of flower growing and their tasteful arrangement in beds or borders, and to awaken increased interest in horticulture in general, so that the gardens and lawns entered in the competition might be object lessons to the rest of the citizens. As the gardens entered were situated in every part of the city, it was hoped that the presence of a highly cultivated and pretty garden would shame the owners of neglected gardens into improving them, and a general and uniform neatness would be the result, so that visitors, when driving through the residential parts of Ottawa, would see nothing unsightly, and could not fail but notice the charming effect of pretty flowers and well-kept lawns.

Lady Minto appointed three gentlemen prominent in horticulture and amateur gardening to act as judges for the three years. Mr. R. B. Whyte, Ottawa's leading amateur gardener, then president of the Horticultural Society, chairman; Mr. W. T. Macoun, Dominion Horticulturist, both of whom are here to-day, and Mayor J. A. Ellis, then alderman and vice-president of the Horticultural Society. The gardens were visited four times during the season—in June, July, August, and September, about the last week of each month. Points were given monthly for neatness and order, floral display, and general effect.

The competitors were divided the first year into two classes—those employing professional gardeners or outside help during the season, and those who did the gardening work themselves or were assisted by members of their own immediate household only. The amateurs were allowed to employ outside help before and on the 24th of May, but not after that date. The city was divided into two districts. Prizes were awarded to the three best gardens in each district; the remaining competitors received no awards. The prizes consisted of gold, silver, and bronze medals, suitably engraved. The second year, 1903, the percentage plan was introduced, to permit all competitors obtaining high percentages to win a prize. In the professional class three valuable medals were presented—gold, silver, and bronze—but in the amateur class all scoring over 75 per cent. received $15 cash, and those scoring under 75 per cent. and over 60 per cent. received $10 in cash. In 1904 the gardens were all judged together, no distinction being made between the professional and amateur gardens. Some of the competitors not caring to receive cash prizes, Lady Minto substituted medals and certificates of merit, signed personally by Her Excellency.

Being an amateur competitor for the prizes given by Lady Minto for the three seasons, I will try to tell you my experience for those periods. Having by a good margin the largest garden to cultivate and keep clean, I was under a disadvantage in comparison with others, who had only say, half a city lot to look after. In 1902, after a poor start, illness made it necessary for me to leave the city for some weeks, during which time the garden ran wild, and although efforts were made to clean up towards the end of the season, my garden, I think, scored last place. With renewed determination I entered my garden the next season, 1903. Early in the spring all the popular annuals were started in quantities, the soil well cultivated and thoroughly cleaned, but having so much space (about 325 feet in border) to decorate, I had for that space comparatively little bloom in June when the judges made their first round, so that while I scored well for cleanness and order I had no score for floral display, and therefore none for general effect. In July the garden showed to better advantage. It was free from weeds, but still wanting in flowers so that my score was still low. In August the annuals

were in full bloom, and also in September, but the grouping of the colors not being satisfactory to the judges, my score was low in general effect; and although I worked hard and kept my garden clean, the garden just got into the bottom of the prize list. Although I had not won a first place I had gotten the experience. Each month, immediately after the judges' rounds, a visit was paid to the first three gardens on the list. There I saw in June early blooming perennials, such as peonies, Sweet William, irises of different varieties, and other flowers. Notes were taken of the arrangements and the color scheme and lists of the varieties of flowers, especially perennials, which I did not grow, and these plants were installed in my own borders at the first opportunity. When the competition opened in 1904 I catered as much as I could to what I thought pleased the judges in regard to the grouping of the flowers and the blending of the colors, and my reward was one of the first prizes. Besides the honor of winning a first prize, and the distinction the garden so won in the neighborhood, there were many other advantages of being in the competition. In the first place, the garden was always scrupulously neat. We had more bloom of better quality than ever before, both for our own use and for giving away. Flowers from my garden won more prizes at the Horticultural Society's shows than in former years, nor did the competition interfere with summer vacation. Holidays were taken just after the visit of the judges in July, and I was back with a week in which to clean up before the judges' visit in August. Personally, I feel that I have received only benefit from being a competitor in these competitions, having gained a broader knowledge of, and therefore keener enthusiasm for, floriculture.

With the termination of Lady Minto's stay in Canada ended the garden competition under her name and direction. After a lapse of a year the scheme was revived again by Lady Grey. The judges appointed by Her Excellency are Mr. W. T. Macoun, Dominion Horticulturist, who, as I have stated, was a judge in Lady Minto's competition, and who is the chairman of the committee; Mr. H. N. Bate, chairman of the Ottawa Improvement Commission, and myself, as the president of the Horticultural Society. Mr. Bate acted as referee or consulting member, and did not visit the gardens with the other judges. In addition to giving 20 points each for cleanness and order, floral display, and general effect, the judges this year have given 20 points for labor and enthusiasm. We felt that that would more nearly cover the different conditions of the average garden, for instance, one competitor had only this year laid out his ground and garden. His perennial bloom was very slight. The owner himself had very little knowledge either of gardening or of the names and habits of flowers, yet he was very enthusiastic, and worked consistently throughout the season to keep his garden free from weeds and to gain knowledge. His marks for floral display and general effect were few, but in labor and enthusiasm and cleanness and order he scored high, and will win a prize. Again, one or two of the competitors started out very well, their gardens in good order, with plenty of bloom for the first two visits. Towards the close of the summer they evidently grew careless and neglected to pick off dried bloom or to freshly rake the walks and borders, so that their garden presented a staleness, which resulted in the garden scoring low in all sections the last visit, and dropping down several places on the list. On the whole, the different competitors kept up their enthusiasm during the summer, some of them remarking to the judges that they were determined to win the highest prize, evidently being quite satisfied with their work. It would have been better for them had they inspected some of the leading gardens in their neighborhood and made observations for

improving their own places, for I am afraid that they will be disappointed when the scores are announced. One garden that scores well up is situated in one of the poorer districts of the city; the houses in that block are small, detached cottages, renting for probably $6 or $7 a month. All the houses on that side of the street are alike. About the middle of the block is situated the house and garden entered in the competition. The house is the home of an English family; the mother and children—chiefly girls—are all lovers of flowers. Their efforts in flower growing were very successful and somewhat pathetic. The garden consisted of a little plot about five feet wide and ten feet long in front of the house and a little alleyway leading to the back yard. The flowers were grown in flower-pots, home-made hanging baskets and old iron vessels, painted green. Fuschias, geraniums, calceolarias, and other house plants formed the collection used to ornament the little verandah. During the long, dry summer these plants were beautifully fresh, always in bloom, and exceedingly attractive, so much so that they drew the attention of the passer-by from the broken gate and unpainted fence which we were told the landlord promised to repair in the fall. In the alleyway spireas and ferns flourished, and in every available corner of the back yard the different annuals bloomed to perfection, showing daily attention. The little yard was divided up, each little girl having a portion. Keen rivalry seemed to exist, and when the judges praised an individual bloom its owner showed intense satisfaction. This garden and the happiness that the family derived from it are object lessons to their neighborhood.

In the method of judging this season, as before stated, 20 points each were given for the following sections: Cleanness and order, floral display, general effect, labor and enthusiasm, making a possible of 80 points each month, or an aggregate of 320 points for the season. Those scoring 80 per cent. or over will each receive a silver medal and a certificate of merit, and those scoring under 80 per cent. and over 60 per cent. will receive a bronze medal and a certificate of merit. There were no restrictions as to professional employment this year, all competitors being at liberty to beautify their gardens and do the work in any way they wished. There were twenty-six gardens entered, seven scoring over 80 per cent. and fourteen over 60 per cent. The highest number of points scored is 288 out of the possible 320. This garden was easily the best, being the back half of a city lot. The lot ran through from one street to another. A neat but strong iron fence of an open pattern permitted a good view of the garden from the street. The owner, a middle-aged civil servant, looks after his garden himself. The garden is evidently his hobby. The grass was cut very regularly and the divisions between the sod and the flower beds were very straight and even. No weeds were to be found, either in the beds or the lawn; the flowers were planted with regard to their surroundings, only the choicest varieties were used. The flower beds were not overcrowded, there being room to rake around each plant, and no plant overhung or laid on the grass. A bed of choice hardy perpetual roses and another of single petunias were particularly fine.

The garden scoring second place, 286 points, was one of the largest entered. A professional gardener was employed. There was bloom in great abundance throughout the season—in fact, there was overcrowding in this garden, and the bloom in many places was of a rather common character, resulting, evidently, from poor seed. The third garden, score 282 points, is owned by an amateur gardener who is one of the leading exhibitors at the horticultural shows. He is posted on and buys the latest and most expensive novelties. His garden is laid out very artistically, although somewhat disadvantageously situated on a side of a steep hill.

The judges were instructed to consider when judging the circumstances of each competitor and the size of each garden. In judging a small garden we expected a higher degree of excellence than from a larger one, and we also expected choicer varieties of flowers in gardens with wealthy surroundings than those in humbler circumstances. The gardens entered were situated in all parts of the city. Lady Grey provided a driver and a very comfortable conveyance. The time taken each visit was an average of four and one-half to five hours each month.

Effect of Competition in Ottawa: The inauguration of the competitions by Lady Minto awakened a new era of enthusiasm in horticulture in Ottawa. A short time afterwards the Ottawa Improvement Commission was appointed by the Dominion Government, who appropriated $60,000 annually for the commission to spend in improving the driveways and beautifying the unsightly spots about the city.

Membership in the Ottawa Horticultural Society rapidly increased through the zeal of its directors, until this year the membership is the largest of any society in the province, and the largest in the history of the Ottawa society. Larger entries and better quality of exhibits were a feature of the society's shows. Flower seeds and printed instructions on how to grow them were distributed to the school children of Ottawa by Mr. R. B. Whyte and other patriotic citizens, who also donated prizes in the autumn for the flowers grown from the seeds distributed. The school trustees sodded and ornamented the grounds around schools that before were ugly and bare. A general love of flowers has been developed among the citizens; florists' establishments have doubled in number in the last four years; market gardeners who formerly grew only small fruit and vegetables are now growing large quantities of flowers, chiefly sweet peas and asters, to sell at the market at a greater profit than the vegetables. Beyond a doubt a scheme of this nature commends itself to the benevolence and public spirit of any citizen of any city or town, no matter what the size, for his or her philanthropy could not find a better channel. The deep thanks of the citizens of Ottawa are due to Lady Minto for the inception of the Ottawa garden competitions, and to Lady Grey for reviving them.

Before closing I will quote a paragraph from a letter recently written by Mr. William J. Hogan, editor of the Wilmington *Star*, to a friend, after returning home from a visit to Ottawa last summer: "The parks and park driveways of Ottawa are simply beyond description. While driving among them one becomes lost in a maze of beautiful flower beds and unique rustic-work houses, arbors and bridges, only to wind up at the Experimental Farm. This is a large tract which the Dominion has beautified at enormous expense, where expert horticulturists experiment with all kinds of fruit and vegetables for the benefit of the people of the Dominion. There are many cities of 80,000 population in the United States, but it is doubtful if any of them can be said to be slumless. This can be said of Ottawa. Ottawa, Canada, stands out in my mind as 'Ottawa the Beautiful,' pre-eminent among all the cities on this continent, and this is saying much when we consider 'Washington the City of Magnificent Distances.'"

The President: I am sure we have been all very much entertained by the paper which Mr. Short has read. We have some time at our disposal before the next item comes up, and no doubt some of you would like to ask some questions and have a discussion upon this important feature of the Horticultural Society work. I felt myself like asking how many entries you had each year.

Mr. SHORT: Twenty-six this year. Mr. Whyte, who was a former judge in the Lady Minto competitions, will be able to tell you how many then.

Mr. WHYTE: Twenty-five to thirty each year.

Mr. SHORT: I brought with me the certificate of merit given by Lady Minto, and which I was fortunate enough to win the last year, and also the medal, so that the members here could see it if they so wished. I should like to say that Lady Minto invited the competitors to Rideau Hall, and there presented, and very gracefully presented, these prizes, and afterwards entertained the members.

The PRESIDENT: Unfortunately we have only one Lady Minto or one Lady Grey at a time in the Dominion. It would be very nice if we had philanthropic citizens who would devote a sufficient amount of money to enable awards of this kind to be given. In Hamilton they have a Local Improvement Society, which has a garden competition each year.

Mr. WHYTE: I may be excused for saying a few words, as I had considerable to do with the Minto garden competition, and I would like to say a little on the mode of awarding the prizes. In the first competition naturally there was a good deal of the spirit of competition evolved, as there were only three possible prizes for each grade of competitors, and it happened that between the third and the fourth there was only a matter of some two or three points, and it did not seem fair to Lady Minto that a person who had worked just as hard and had practically done as good work should have no recognition. That is the reason why it was changed the second year, so that those who got a certain percentage should get a prize, and the third year she thought everyone who had a certain percentage should have a prize or an equivalent, so that is why she evolved the medal system. She told me in a letter from England that they had just had their competition among the tenantry, and they had gone on that system and it had worked admirably; everyone who had put forth the same effort got the same recognition. There was no jealousy, because they all got recognition, and that was the reason why she introduced the scheme the third year, and the same scheme has been carried out this year, and I think that is by far the best way. It is doubtful if it is wise to publish the score of the winners. She was very anxious to avoid any idea of rivalry or jealousy. It came out in this case, though, that certain people had got the greatest number of points, but I think it is on the whole better that those who are prize winners should all appear on an equality, and that there should be no distinction between first, second, and third. I think that would be found the best scheme. As to the expense, I do not think there is a decent sized town in this province that could not raise, say $150 for a scheme of that kind. They never could spend money to a better purpose; it would encourage decoration and beauty of houses in the city, and $150 would go a long way in buying medals and certificates. I may say that it was by my suggestion that Lady Minto had that certificate signed by herself. I thought, and my fellow-directors thought, that there was hardly anyone that would not appreciate having a certificate like that, that they could hang in their house and frame, and show to their children afterwards that they had obtained the distinction of having a prize garden. I think my fellow-judges will bear me out in the fact that that was one of the best features in the competition, the awarding of those certificates. Last year there was a first-class certificate. Mr. Short's certificate read: "Lady Minto Garden Competition, Ottawa, 1903. First class certificate, awarded to Mr. Short. Judges, R. B. Whyte, W. T. Macoun, J. A. Ellis. (Signed) Mary Minto," with the little quotation: "The flowers are nature's jewels, with whose wealth she decks her summer's beauty."

I think that any society undertaking that work would find it a great addition to give a certificate of that kind, signed by the mayor of the city and by the president of the society and by the judges. It is a record that anybody would be proud of, and it adds very much, I think, to their interest in the competition. As to the results, of course we did not obtain all the results we would like to see, but that we obtained good results there is no doubt. I can recall several competitors that started low down in the list, but before the last year they had got away up to the top, and that is the best criterion we can have of its success. Some of the gardens that entered in the first year but did not get into the prize list are now show gardens, and the result was not only a benefit to the individual competitors, but to all their neighbors a great advantage indeed.

Mr. Macoun: I have been chairman during the past season of the Lady Grey competition, and I would like to say a few words regarding it. I think the points mentioned by Mr. Whyte are very important—that is, that the prizes should be made on certain percentages. After our three years' previous work, we found that this year the gardens were in a much more satisfactory condition than they were before, because a large proportion of these, probably half, were the same gardens that were entered in previous years, and as a result of that I may say that in this year's competition, although the details have not been made public yet—they are in the hands of Lord Grey at present—there are about seven gold medalists, fourteen bronze medalists, and only five who receive certificates only. So you see it is a large proportion of the gardens that are getting first and second place, and I think that is the way in which a garden competition should be started—at any rate, so as to encourage just as many as possible to work in their gardens. I might say that we had a very nice letter of appreciation from Lord Grey quite recently, congratulating us on the result of our work this summer, and in that he impressed on us the importance of having those in the competition enthusiastic in their work. Now, in Ottawa this year we had the dryest summer in my remembrance, and yet enthusiasm was kept up among those who entered in the competition throughout. There was only a very small number who lagged, and as a result the gardens were kept in fine condition all summer, whereas if there had not been a competition of this kind I am certain they would have been dead and dry.

A Delegate: Can you give us some idea of the basis on which you score?

Mr. Macoun: I was just too late to hear Mr. Short's paper, and I do not know what ground he covered, but we had for each month a maximum of 20 points for floral display, 20 points for neatness and order, and 20 for general effect, a total of 60 for each month. We found that that worked fairly satisfactorily, but we felt in beginning the work this year that there were some other things that should be taken into consideration, some things that are not quite definable, and we covered the ground under "labor and enthusiasm," so that we would have a little to go on in each direction, so that at the end of the year in summing up our points we could adjust them. For instance, if after summing up our points for the season we found that the gardens did not stand just the way they should do, taking a general estimate of the season, we could work on the 20 odd points for labor and enthusiasm, and put the gardens in their proper places, and we found that it worked out very satisfactorily indeed.

GARDEN COMPETITIONS IN HAMILTON.

The PRESIDENT: We have with us this afternoon Mr. J. O. McCullough, president of the Hamilton Horticultural Society, and, although the garden competition has been undertaken in his city by the Local Improvement Society, he might give us some valuable information.

Mr. MCCULLOUGH: The Horticultural Society has never attempted a garden competition, but the Improvement Society has, and we have seen the results in the poorer portions of the city. Mr. Whyte spoke of the elimination of competition. At the same time I think competition has done a great deal of good in Hamilton, where there were only probably three prizes given. What was called the *Spectator's* Garden Competition, got up by the Improvement Society, was in some of the north end streets, what we call the worst part of the city. When we started in there there were only a few fronts fixed up; now you could go down whole streets where every one of them are in order, everything kept in order, and it is simply competition and striving to do a little better than one's neighbor is doing that has caused it. Not that I object to appreciating the effort of everybody, but at the same time there is a danger, if everybody is going to get a certain prize, that the standard may be slightly lowered.

Mr. ALEXANDER: I have been connected with the City Improvement Society of Hamilton since its inception, and we believe that a great deal of improvement has taken place, especially in some of the lower class streets—that is, streets that were utterly neglected before. We took the precaution some years ago of offering prizes to a considerable amount to certain sections of the city that we saw required improvement. We would take a section comprising perhaps five or six streets abutting on Main Street, and we found that the change was simply marvellous. This was especially so in the street called Smith Avenue, which fortunately had no fences in front of the houses, and we got an effect there, on both sides of the street, in two years that was simply surprising. The men, who nearly all owned their own houses, straightened their lawns so that one corresponded with the other in level and all reaching the street at the same level, and in addition to that had flower beds and decorations of various kinds, flower boxes in the windows, etc., so that you would really not have known the street after two years' trial. We carried that on in other parts of the city, and the consequence is, as has been stated by Mr. McCullough, that quite a transformation has taken place in streets and in front of the houses that had been utterly neglected before. Of course, we all know that when a man takes special care with his farm or garden that whether his neighbors on each side of him have any inclination that way or not, they are driven into it from sheer shame in seeing the contrast between their neighbor's well-kept garden and lawn and their own. The first year of our existence as an improvement society in Hamilton we confined ourselves largely to the effecting of improvements visible from the street. Once or twice, however, we also gave prizes for the best kept back yards and gardens generally not in view from the street, and that also had a general effect in improving a great many of the back portions of many of the streets of Hamilton. Photographs of those have been taken in some cases. and the contrast is very marked. We found that the societies seconded our efforts without very much persuasion, and since we had been in existence two years it was so manifest that improvement was being made that we always got all the money we wanted and had no trouble at all. One or two individuals would go out and see their friends, and we got all that was needed for the purpose. We have not done anything this year, advisedly so, because

we wanted to see if we had educated the citizens sufficiently high that they would do the thing not from any desire of a prize, and we found that the good work has gone on without us offering any special inducement. (Hear, hear.) That, of course, should be aimed at throughout, because if it is a yearly thing, some people, we can understand, would continue doing so just for the sake of the money prizes. They were not all money prizes, however; we had several gold medals that had been given, and these were distributed also. We are quite satisfied with the plan that has been adopted in the city of Hamilton. Perhaps it could be improved—no doubt it could—and in the course of another year I think it is the intention of the society as a society to launch out perhaps in something different. We have given prizes for rockeries, also. You will know at the corners of streets, often, however nicely a man may keep his lawn, unless he had a fence—and we have gone for the taking down of close fences especially—he will have a pathway right across his lawn, going from one street to the other at right angles to it. Not only for the sake of decoration, but also to somewhat checkmate this matter, we offered prizes for corner rockeries. These were built of water-worn stones, and where they have come from I cannot tell. I am surprised at the quantity of that beautiful stone for rock work that was scared up as a consequence of our offering prizes for it. They are generally built up and filled in with good soil and flowers planted, flowers of trailing variety and others, so that even the corners of our streets have been beautified thereby. That and offering prizes for window boxes, as well as the keeping of the front gardens and back gardens, has constituted the work we have gone into. I may say we divided the city into sections, and very early in the season we appointed two judges for every section. They were supposed to go at least once a month from June to October, and the judging was done by these two judges. There was nobody to review their work at all, but they handed in their report to this society, and we had a meeting in the City Hall: and I may say the Council Chamber of the city of Hamilton was on these occasions filled to its utmost capacity, showing the interest which the citizens took in this matter, so that we have reason, I think to feel satisfied with what has been done by the City Improvement Society. I have great faith in what a city improvement society can do in a town, either big or little. It was with the City Improvement Society of Hamilton that the idea originated of having a boulevard along the brow of what we call the mountain, the escarpment there; the idea originated at one of the first meetings. Although it has not been fully accomplished yet, it is in a fair way to be accomplished when the citizens of Hamilton and the strangers who come there will be able to walk along the top of the escarpment and get a view of the valley below the whole distance of the city. If I had thought I would be expected to speak I might have had a few more statistics. I regret very much that Mr. Steele was not here, who has really been largely the Improvement Society in his own person. (Applause.)

J. Kneeshaw, Hamilton: With regard to Smith Avenue, the first year of the City Improvement Society I was one of the judges on that avenue, and there was not one place there on that avenue to which we could award a prize by any stretch of imagination.

Mr. Short: In our travels over the city performing our duties there was a phase of civic improvement which presented itself to us, over which we have no control unfortunately, and that is the size of the building lots of the average city, or at least in Ottawa any way. The building-lots are far too small; there are numbers of the citizens who would have taken part in this competition and who would be members of the Horticultural Society had they had sufficient room to engage in floriculture. While we cannot do

anything in this respect, I wish we could bring pressure to bear on land companies or sellers of lots that they would apportion lots of sufficient size to enable the owners to have a flower garden.

Mr. McCULLOUGH: In speaking of apportioning the lots, there is a new survey laid out in Hamilton by which every man must hold forty feet. The conditions of the sale of the lot are that he shall build one house on forty feet and no more, and he must hold forty feet. That is a new survey laid out within the last three months. When Mr. Alexander was talking about the back garden I could not help thinking that beyond the back garden there is something else, and that is the alleyway, and the alleyway is not usually as well kept as it might be, but Mr. Steele has what we call a model alleyway in Hamilton. All the residents with their property abutting each side of that contributed to gravel that alleyway and keep it clean. That alleyway is simply like a carriage drive all through, and is kept that way all summer, and we hope to see a great many more like that before long.

Mr. W. T. MACOUN: There is a question with regard to the small lots that Mr. Short brought out. In the garden competition there is difficulty in judging gardens which range in size from one acre down to half a lot, and we had that difficulty this year. We had the difficulty of judging gardens that had professional gardeners, and judging gardens on half or three quarters of a lot where the work was done by the family without much knowledge of gardening, but who were bubbling over with enthusiasm, and I am glad to say that some of those who got the highest awards in the bronze medal class were among the smallest of these gardens. We tried to be as fair as we could, taking everything into consideration; and, as I say, some of these smallest gardens are near the top in the bronze medal class from the fact that they were the people who were very enthusiastic and had their gardens looking just as well, almost, as possible under the circumstances. There is the great advantage of judging on a basis of points. If you have only three prizes it is almost impossible to give one of those prizes to a small garden; the public would not understand it at all. But by having some 60 to 80 points for second prizes and 80 to 100 for first, a certain number will get it, and you can include in that a number of small gardens as well.

A DELEGATE: What are the points?

Mr. MACOUN: For the silver medal, 80 to 100; and bronze medal, from 60 to 80.

Mr. DIAMOND: Would you not think it would be advisable to classify by sizes of lots and give awards the same as we are scaled in the grant from the Government here? A person that has a hundred foot lot in front and the other has only twenty-five——

Mr. MACOUN: It is all right if you have enough gardens.

Mr. DIAMOND: You are getting money from the Dominion Government. You should be able to divide up with the people who have a small lot. My idea is you should equalize it in that way.

Mr. MACOUN: Where you have only a small number of gardens it would be especially difficult—in small places.

Mr. DIAMOND: It is not fair for a little fellow to come up against a big fellow.

Mr. MACOUN: If he is doing the best he can he should be encouraged the same as the other.

A DELEGATE: Do you ask for entries for competition, or how do you find it?

Mr. Macoun: Yes, we ask for entries before a certain date.

A Delegate: Is there any entrance fee?

Mr. Macoun: No.

Mr. Alexander: I might explain that we get rid of the difficulty of the relation between a small and a large garden by excluding strictly every garden, every person, who could employ a man to keep the garden. We confined ourselves to places where the man had to do his own gardening, the cutting of the grass, etc.; we took no notice of places on residential streets where the parties always kept the gardens well by employing a gardener; we offered no prizes for these. To make an entry they had to say that they were going to compete very early in May, and the judging commenced the following month.

Mr. Macoun: We had examples of that this year. We have overcome that difficulty, I think, almost entirely by taking everything into consideration. We found gardens this summer that had gardeners all the time that were a discredit to the people who had them, where they would spend 25 or 30 cents in the cheapest seed that could be got in ornamenting their garden, whereas the people who had no gardener at all would get the best seed and make the best show possible. I think by taking everything into consideration it is easy to overcome that. The difficulty is, in smaller cities especially, you cannot get enough people into the thing to exclude anybody.

Mr. Woodroofe, Woodstock: Do I understand Mr. Alexander to say that they exclude anyone who employs help; that it is confined entirely to those who do their own work? There are three classes—there are those who employ hired help; there are those who do the work entirely themselves; and there are others, like myself, who, while perfectly willing to do the work themselves, cannot do it all, and employ a certain amount of help. I understand those would be excluded from the competition in Hamilton.

Mr. Alexander: Oh, yes. We did that because our object was to improve places that were not improved, and we went so far as to offer a special prize for the ground around newly built houses. You know, some of you, the rapid progress made in Hamilton by the influx of population, which has necessitated the building of a great number of new houses, and we noticed that sometimes houses partly finished, and some of them finished, lay for months with brick and mortar and refuse lying around. To get rid of that nuisance we offered prizes for that, and you would be astonished to find the result of people hurrying up, the moment they occupied the house, to get the grounds cleared up. We had no trouble about it; we never found that people who engaged a gardener to keep their places right offered to compete.

Mr. McCullough: It seems to me the great difficulty in judging them all alike would be that you could not get the amateur who did his own work to go into it at all if he knew he was going to come into competition with the man who hired a gardener. That is what we found in Hamilton; it would be impossible to get the small man, the man whom we were trying to reach, to go into it at all if he knew he had to compete with a man who employed a gardener. On the other hand, I think myself it would be a very good idea if we could exempt, for instance, grass-cutting or something like that. Very often a man has his garden and takes great interest in it, but he does not cut his own grass. I think that was done once in Hamilton, but I am not sure. If we could say to a man, "You can hire a man to cut your grass, but you must do all your floral work," we would keep both classes.

Mr. Whyte: Ottawa is not pledged to any class. The man who took the highest prize last year was simply an amateur who had no help except his

sisters. He had not a very big garden, but it was most beautifully kept, and he was interested. Really, it is not so formidable an objection as it appears at first sight. As a rule, men who are hired as gardeners are not very artistic gardeners; they are generally laboring men more than gardeners.

Mr. DIAMOND: You would not want to say that to the men.

Mr. WHYTE: No; but we find that some of the very best gardens were just as well kept and just as beautiful. I think, on the whole, the most beautiful garden was this amateur garden.

Mr. DIAMOND: I believe in competition, in everything pretty nearly. It has been recognized in all the horticultural societies, I believe, that prizes have been given for professional men and prizes for amateurs. Now, I believe that is a proper mode to act upon, because we know a professional man is devoted entirely to the profession of horticulture, or floriculture, while the amateur is trying to get that education which the professional man has, and it must be by experience, and he has got to work a good deal harder than the man who is in the professional business. The professional man has everything to provide for his flowers—he has his houses and everything else; the amateur, if he raises a flower, has got to do it in a very different manner unless he is well off and has a greenhouse. But I believe in competition, and it has been recognized, I think, as I say, in all horticultural societies in giving prizes, and I do not know but in your association here to-day a professional man is awarded more than an amateur in certain lines because an amateur cannot raise all the plants and keep all the flowers that a professional man can. While this is a matter of opinion only, and we canot arrive at anything very definite except in expressing our views, I am glad that the discussion has taken place, because it gives us a variety of ideas, and I presume each society will do the best they can; but I must draw your attention to one fact, that the Civic Improvement Association is quite a different thing from the Horticultural Society. They, of course, start out to beautify certain spots in their city which nobody else does, and it is either by civic employment or by an association; they devote their attention to that specific purpose. There are no prizes awarded in that case as I understand it; it is simply to beautify the city in which this society exists. The Horticultural Society, under the present Act, has full power and authority from the Government to do the same thing. They are going to do the best they can, and I am glad the discussion has taken place.

Mr. JARVIS: I represent the Bowmanville Horticultural Society. I am a delegate sent here by that society, and as the members from Ottawa and also from Hamilton have been speaking of prize competitions in their cities, we are contemplating the same line of work now under the new Act, although we have never done it at all. What I wanted to ask is whether the judges and committee on these competitions receive any remuneration for the work done by them?

The PRESIDENT: I think not, generally speaking.

Mr. SHORT: Nothing whatever.

Mr. MCCULLOUGH: Nothing whatever.

Mr. KNEESHAW: There is one further point, and that is to say that while we awarded prizes exclusively to amateurs, we gave certificates of merit to large gardens who employed gardeners, so that they were better pleased with that than with any other prize.

HOW TO INTEREST SCHOOL CHILDREN IN HORTICULTURE.

J. Thomas Murphy, Secretary Simcoe Horticultural Society, Simcoe, Ont.: I am not prepared to say much on this subject, for the reason that, although secretary of our society, it is work done through a committee. Unfortunately at the time of holding the shows I am here in Toronto attending the Executive Committee of the Fairs Association, so that I am not able to see the working of it. The thought that was with us in getting the school children interested was, of course, to improve in a way the appearance of the town as regards the beautifying of it in the lawns and also in the gardens. The course we pursue is this: We buy a certain amount of seeds and give it to the school teachers, who distribute it to the pupils of the public school. The public school is divided into two divisions; I think we have some eight divisions in the public school; the first, second, third, and fourth divisions are the junior ones, while the fifth, sixth, seventh, and eighth are the more advanced. We buy the best seeds we can procure. We procure these seeds from the best growers that we can find. I think the first year we spent only about $5 in seeds. We held a little exhibition in the Drill Shed, in close proximity to the school, and in the afternoon the flowers were placed and judged while the children were in school, and by the time school was out it was ready for inspection by the children. In the evening our 39th Regiment Band very kindly turned out, and gave us some music, and the public came to see it. Last year—1905—we increased the amount of seeds we gave. We found it was very encouraging to the children; they took quite an interest in it, and it was astonishing to see how deeply the little tots became engaged in it, as anxious as the old growers that exhibit at the fairs of the horticultural societies. We gave about $10 worth of seeds, I think, last year, and we had the same program—that is, the flowers were placed and judged in the afternoon and then in the evening the band played again, and the public were invited, and just a plate placed at the door. We realized out of the contribution that evening $15.75. After paying the expenses of that fair, which amounted to $5.75, we got the $10 back that we paid out for the seeds. We had asters, white, six; there were twenty-one entries in that in the junior division, also in blue or purple there were twenty-three entries; Asters, mixed colors, six, there were twenty entries; nasturtiums, twenty-one.

Mr. Whyte: How many children got Aster seed?

Mr. Murphy: Well, that was kept by the committee. Just as I say, I had not the working of this; it was done under the committee.

The President: There would probably be more than a couple of hundred in a town of your size, perhaps 200 packages of seed?

Mr. Murphy: Yes; but they did not give them to every pupil; they exercised some discretion.

The President: It would not exceed that number?

Mr. Murphy: Nasturtiums, mixed, twelve; we had twenty-nine entries. The total entries in 1905 amongst the school children, —just the public school—were very nearly 500, so that we had a very creditable display; in fact, it was a beautiful display. There is no getting around it, and the children were very much interested. This year we suffered from the drouth; we had a six weeks' drouth, and we did not expect to have as good an exhibition as last year, and, of course, we did not. The drouth came at the time when these plants needed the rain, but still we had quite a number of entries. In Asters, white, six, we had thirty-seven entries, so that there was an increase over last year. Then we had thirty-eight colored Asters, six, and so on. The entries this year came to not quite 400. We had forty-two

entries in a collection of annual flowers. In Asters, white and colored, in the second division, thirty-one entries; forty in colored Asters. We have got the children interested now. We realized about $15 again this year by the collection at the door, and instead of recitations and the band, the same as last year, we had the band and just a few addresses from the resident ministers and two principal persons in the town. Of course we find that it is creating competition between the children, and we find, also, that our gardens are improving in appearance; not only that, but it is improving the lawns, especially in the forepart of the dwellings, and the appearance of the town is very much improved in the last two or three years.

Mr. GUILFOYLE: What date do you hold this summer exhibition?

Mr. MURPHY: It was in September, just the time of the Toronto fair, the second week in September.

Mr. WHYTE: Were any instructions given to the children on how to treat the seeds or how to grow the best flowers?

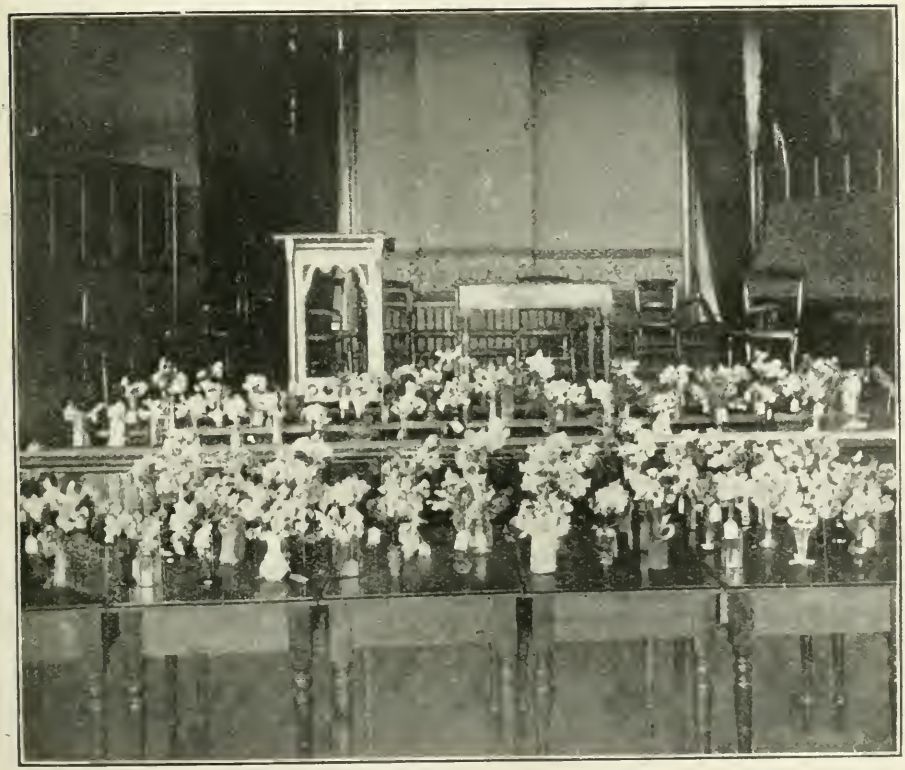
Mr. MURPHY: Well, I could not say as to that. I suppose it is likely, because the chairman of the committee, Mr. Johnston, who was formerly secretary of the Horticultural Society, is quite a good amateur gardener, and I think at the time of the distribution he has given some of those instructions to them. (Applause.)

SCHOOL CHILDREN'S COMPETITIONS IN OTTAWA.

Mr. SHORT, Ottawa: Mr. R. B. Whyte for the last few seasons has been carrying out a very successful school children's competition in Ottawa. I suggest that he be asked to outline his method of procedure.

Mr. Whyte: There is no doubt about the value of such work as has been discussed in the last hour in the beautifying of the lawns and streets and what you might call the public effect. But I have always thought that the great thing, after all, was to reach the individual person; and it struck me we could not do that better than by beginning with the school children—with the young child. I have always felt that if you could only get a boy or girl really interested in growing flowers you were doing him the greatest benefit you could possibly effect upon him. I do not know anything that does more to keep a boy or girl out of mischief, out of bad habits and bad company than to have a garden of their own, and to take an interest in that. With that object in view, through our horticultural societies four years ago, I began the distribution of seeds to a limited number of school children. In a large city like Ottawa it was financially impossible to give seeds to all the children, and I found always there were many of them that could not grow them; they had not the facilities. For that year I started with Aster seeds, and the mode I followed was to give three packages of Aster seeds—one white, one colored, and one pink (I am speaking from memory)—to ten children in each class of fourteen schools of the city. I left it to the teacher to select those who would get the seed. I delivered to the teacher an order on our seedsman; I delivered ten orders to each teacher to give to the children he thought most likely to carry it out. I gave them, along with the order, three entry tickets, numbered, with instructions that the entry ticket should be attached to the exhibit; and the teachers supplied me with a record of the names of those who got tickets and what they were for. In discussing the matter with friends in the city we came to the conclusion that it was absolutely necessary that we should give instructions what to do with them, so I printed a little bulletin (showing bulletin), and that bulletin I made just as simple as I possibly could. It gave them the necessary instructions

A Prize Garden in a competition held by The Deseronto Horticultural Society.

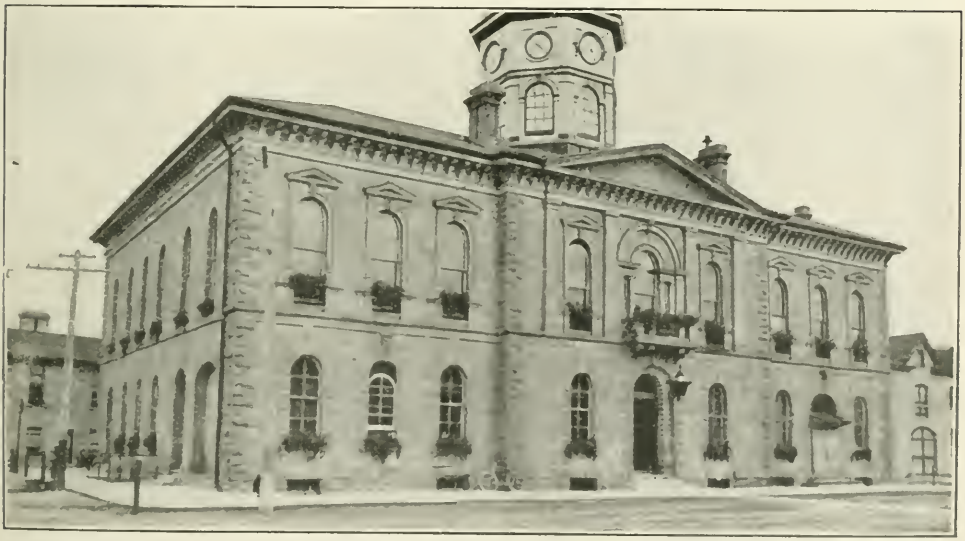


Sweet Pea Exhibit, grown by School Children for prizes donated by Ottawa Horticultural Society.

how to grow Asters successfully. I found a good many of them failed, even after reading the instructions, but we foresaw that, and we did not expect they would all succeed. My intention was to visit all the children during the summer and see how they were getting on and help them with what advice I could, and I did get over a good many, but I found, in spite of instructions a good many had covered them too deep, and they didn't come up at all, so that when the time came there were just about 40 per cent. of the total number of children able to make their entries; but I was more than pleased with the quality of a lot of flowers shown. In every respect they were equal,, and in many cases superior, to those grown by our regular exhibitors. The thing was kept up another year. In the second year it was sweet peas. It was thought that the Asters were rather a difficult thing for young children, inexperienced children, to successfully grow, but we thought everybody could grow sweet peas -they are comparatively easy.

The second year we tried sweet peas, with very gratifying results. Only about the same number showed—40 per cent.—but it made a very pretty show. In discussing the results of that year's work we felt that there were a great many children disappointed because they were not in a position to grow seeds: they had no gardens. The next year a division was made and ten children got poppy seeds, seeds that I grew myself, and also the same number of children got geranium plants. The plants were given out in four-inch pots, most of them in bloom, of the same variety, and prizes were offered for these at the September show. About the same proportion succeeded with the geraniums. The fourth year—this past year—Phlox Drummondi was grown and begonias; we divided the seed into two divisions. The proportion still kept about the same. One of the great difficulties that faces a city organization of this kind in encouraging school work is the fact that the holidays interfere very materially, as such a large proportion of the school children leave the city altogether for six or eight weeks in the summer time. It is very difficult, and I don't think we can expect ever to get more than what we have got, that is, 30 to 40 per cent. to complete the experiment. In smaller towns the proportion should be greater, but the success we have had on the whole has been very, very gratifying to Mayor Ellis and myself, who carried it on at our own expense for the last two years. Those who have showed showed exceedingly fine plants. The flowers have been very good in every case. The flowers have been equal to those shown by the more experienced exhibitors. I may say I have pursued the same policy in every case of issuing a bulletin. I was convinced that it was no use to give seeds without instructions, and verbal instructions were practically of no use, so in every case I have issued bulletins, how to grow them, prepare them for exhibition, and everything of that kind. I might speak of another feature that I have found of very great value, and which I have kept up this year, in addition to the money prizes, which were never very large, because the expense was considerable—in the case of flowers the highest prize was $1.50, and from that down to 25 cents. On different occasions, including this year, I have given a comparatively large number of Gladioli bulbs, in addition to the money prizes. Each first prize this year got 60, each second 50, each third 40, and so on down. The first year I tried (that was two years ago) I offered prizes for flowers grown from those bulbs the following year, and they were a remarkable success. The value of that is that it keeps up the continuity; you have got that same child for at least two years. Naturally, it is the older children in the school who get these seeds, and they have been put in the higher classes that year and you lose them; but if you give them a bulb prize you hold them for at least two years. This year we are going to give Gladioli

The Fall Exhibition of the Brantford Horticultural Society.



The Guelph City Hall as improved by Window Boxes added by The Horticultural Society.

bulbs again; there was a general consent on the part of the children. I grow these bulbs myself, so that there is no extra expense in giving the bulbs.

Interesting Brantford's School Children in Floriculture.

J. Walter Brooks, Brantford: Our society was organized in 1868, but we found under the old plan of carrying out the show for flowers, fruit, and vegetables it was a failure with us, and we got bankrupt, but it has been in existence all that time; we never failed during that time, and I think it always paid before that year.

The President: What year was that?

Mr. Brooks: The year we failed was in 1903. In 1904 we held no show. We got through the year as well as we could, and saved a little money so that we could start the next spring. The next year we started, and we bought seeds and gave to the children, and we gave plant prizes. We gave no money at all, and we found it has been very successful. This last spring we distributed 8,277 packages of flower seed to 1,500 of the children of the public and separate schools. There were five in each large package; those were delivered to the children, five packages of different seeds. Last year we gave Asters, Scabiosa, Zinnia, Verbena, and Nasturtium. We did not bind them to take seed from us at all. Our exhibition was held on September 14th. We had 493 entries, and gave as prizes 127 plants. These were acaria, palms, rubber plants, and ferns, and 600 hyacinths. The hyacinths were for some extra prizes. We found our program ran out of prizes; there were some that our judge thought should have some extra prizes, and I gave them bulbs then. We gave a bulb to each pupil that made an entry, so that they all got something. I am around the streets of Brantford a great deal, and a great many of the ladies of the city have met me and said: "Oh, Mr. Brooks, haven't you got any more of those nice plants. I didn't know there were such nice plants before. I would like to buy some." I told them I did not have any to sell. I always gave them away. This year we gave away 600, and I expect good results from them. At our show I think there would be about 1,500 present; we have no way of telling, but I think there were about 1,500 that night, children and parents, all very enthusiastic. Our seeds were purchased wholesale, and we put them up ourselves; we bought the best seed we could buy—in fact, they were very good flowers. We put them up at a trifle over ½ cent a package after the printing was all done. We had instructions on our envelopes telling them how to plant them. This is our prize list and program for last year. (Showing.) In putting our seeds up there was a circular telling you how many seeds there are to the ounce, how many seeds there were in each package, how many packages there were in an ounce, and the kinds. Our work, too, did not stop there, and we succeeded in getting the city and authorities to plant bulbs in the city parks. They are just planting them again this year; that was the first time they ever planted tulips in the parks, but through our exertions they have started to do so. Our city altogether is beautified considerably by those flower seeds that are given away. Anyone walking around the city of Brantford will notice at almost every house that there are some flowers growing where they did not grow before. We also had communication with the City Council respecting a piece of land that we have in the city belonging to Greenwood Cemetery. It is not going to be used for cemetery purposes any more. We asked them to get this fixed up and plant it with shrubs and trees for nature study, and have them labelled with the common and botanical names. That they could not do at present; they would have to get special legislation, but we think if we

try them again they probably will do something. They made some improvements there, but we did not succeed in getting them to carry out the other. Whether we were breaking the Act or not by what we have been doing, I see that we spent nearly half the money that we spent on shrubs, plants, seeds, and bulbs. I do not know whether the Government will bar us out or not according to the Act.

Mr. James: Why are you afraid?

Mr. Diamond: The Act is not retroactive.

Mr. Brooks: Those shrubs were given to members, for a premium on the membership. Plants were given to the children, were for prizes, and the seeds and bulbs were given to the children for prizes, and I find that we have spent over $100 on that. Our shrubs were $14.85, our plants were $31, our seeds were $42.13, and our bulbs were $10.35. You see that is the way we spend our money, and as Mr. Cowan figured out what we would be entitled to next year from the Government, I think that the expense of doing this work should go in with the amount of money expended, because it is all spent for that same purpose. Really it is the cost of delivering these things.

Major Snelgrove: You mean the general managing expenses?

Mr. Brooks: Yes.

Mr. Diamond: The reports will be made in January, so it will not affect the report in May.

Mr. Brooks: No, I suppose not. I shall be pleased to give any information to those interested in giving seeds to children, even if they write me at any time. (Applause.)

Mr. Schierholtz: We at Elmira have done some work among the children, but ours is yet the day of small things. We have not any wealthy men, or at least any liberal-minded men, that give $50 or $75 a year to our Horticultural Society, and our membership is small, only between fifty and sixty-five, so that the funds at our disposal do not amount to very much. But with what we have we have done a little. Last year—in 1905—we distributed Aster seeds among the children. We bought between $4 and $5 worth of seeds of different varieties and mixed them ourselves, and put them into packages, giving a package of seed to each family represented at school. Well, they took quite an interest in it, of course. I don't know that the percentage that exhibited was any larger than Mr. White said; I do not suppose it was. In the fall we held an exhibition, allowing the children to exhibit those flowers raised from these seeds, but from those only, and exhibit them in connection with a general exhibition, where anybody was allowed to compete. To the general exhibitors we gave money prizes, although only small ones, and to the children we gave bulbs. We gave them the privilege of picking out whatever bulbs they wanted, as much as their prizes amounted to. This last spring we added sweet peas to the Asters, and we had an exhibition again, a very creditable exhibition, and the children seemed to take a great interest in it. I would just like to ask those who tried that plan whether they barred any other exhibits that were not raised from those seeds, and what results they had.

Mr. Diamond: In the Belleville society we barred everything that was exhibited that was not according to the seeds that were distributed; that is, the judges knew exactly the color of the Asters that were to be exhibited, and they knew pretty well nearly whose seeds they were, and the judges I know, in very many instances, threw out Asters which were not of the same description or color. Even among the big society exhibitors you will always find they are true to their instinct, trying to get the biggest; it makes no difference whether they have to borrow it or not; and it was very often found that

some fine Asters were not of the same quality, and our judges have always thrown them out. This year we have made four beds in our school yard, and we have had them planted with tulip bulbs. We intend to carry that out in the different schools, and probably next year we will give prizes for each school. We have given seeds to all school children, from the lowest in the public school to the highest in the high school, and a family may have three or four in the same school, one commencing in the primary and another in the high school: we generally manage to give them each a package. We give to all schools, separate as well as our own. It has been very successful in Belleville, as far as distributing the seeds is concerned. Instead of issuing instructions as Ottawa has done, we have envelopes, and upon them we print the instructions to each child, so that they have the mode and all that right in the package which they get. We have not come up to the high standard that they have in Ottawa, in giving them the whole description of how to attend to them after the plants have grown, but we have found it very instructive to the schools and to the beautifying of our city. I agree thoroughly with the idea that there is no act that the Horticultural Society, or any other society, can do better than to cultivate the taste of children for flowers in the homes, and we have started—as Major Snelgrove started to discuss it—a Civic Association. There is a branch of that started in the city now, and we trust by next year we will have a better report than now as far as that is concerned.

Mr. HAYDEN, of Cobourg: I think it my first duty, as I was one of those who first started the civic improvement idea in the Province, to congratulate you and Mr. Cowan and the officers who have had this good work in hand in the last twelve months. I do not know when I have heard a subject that has delighted me more than Mr. Brook's presentation of the work done in the city of Brantford during the last year or two years. Surely such work as that is not breaking the new Act, as he said in closing his remarks: "I hope by doing good to the school children of the city of Brantford I am not breaking the Act, and that the Department will not be keeping back some of the funds of the Brantford society." All I can say is that every time you do good to the school children or beautify your town or city you are building up a true horticultural society in that city. I have had some experience in Cobourg in introducing the civic improvement idea; I have had some experience in giving seeds myself to the school children of the town of Cobourg in the last four years, and I never spent a dollar that I was repaid so much as by donating these seeds year by year to the children of the town of Cobourg. I could keep you delighted just to tell the experience, the delight it has caused the children of the town of Cobourg growing the Aster and the sweet pea seeds and the great interest they have taken in all lines of horticulture, and their parents as well. It is visible every fifty yards you go in the town. Compare that spirit and the spirit of civic improvement that Mr. Whyte and other speakers have shown to-day with the old regime, with the old idea that horticultural societies were nothing but a place where a man should spend a dollar and get two or three dollars of seed potatoes, and consider that that step has been taken in the last three to five years. This larger idea seems to be taking hold all through this Province. The only thing I regret about this magnificent meeting to-day—not that I am a disciple of Dr. Osler: not that I do not like to see the old grayheads in this room—but I would like to see at another meeting next year a representation of the young men of this province, and I throw this point out, that when the horticultural societies are electing their two or three or four delegates they should send a representation of the young men of the

A Corner, showing a Rose Bush, in a Prize Garden — at Deseronto.

A Prize Garden at Deseronto, Ont., in a competition held by The Deseronto Horticultural Society.

societies. I thought of that this morning, and I think so seriously this afternoon. I can only say that I am delighted with the discussion this afternoon and this morning, and with the act and the whole work of the association. I do not believe there is a town in the Province of Ontario where you cannot get some liberal man if you go to him the right way and ask him to present a package of Asters or sweet peas to every pupil in the town. They only cost a cent to a cent and a half. I am quite sure that when every society represented here to-day comes next year to report, the most pleasant report, perhaps, will be that of the work done among the school children. (Applause.)

Mr. Woodruff: We have heard of the success of quite a number of our societies in the distribution of plants and seeds to school children. You will perhaps like to hear something on the other side of the question. Messrs. Scarff and Dawes, of the Woodstock Society, are present.

Mr. Scarff, Woodstock: Woodstock has been, for many years taking a great interest in this line of work, instructing and teaching the school children to beautify their homes. We have distributed many, many hundreds—and thousands, I might say—of bulbs and plants to our school children, and it has had a wonderfully good effect. I think Woodstock can pride herself on being one of the prettiest little cities in the Dominion of Canada for homes which are beautified by flower beds and shrubbery, and also their public school grounds. I do not know that I can advance anything but what has already been said, more than that I am delighted to be present here to-day and see that this Ontario Horticultural Association is progressing so well in such a short time. I am sure in the next few years, if you keep on in the way you have started, you will be a credit to this country. I quite agree with the gentleman who spoke a moment ago; I would like to see more of our younger people represented in this association. I think the remarks which were thrown out by him were very good, and should be taken advantage of by some of our younger members.

Mr. Jackson, Port Hope: Trying to develop and inculcate in the child at school the love for flowers has been a pet scheme of mine for years. When I was secretary of the Port Hope society for some years it was a thing I advocated strongly. I am very sorry to find Port Hope not represented here to-day; I fully expected it would have been, and I do not know why it is not. It does seem to me if we can establish something in the minds of our boys and girls of this idea of floriculture it will spring up and bloom and blossom. I really feel very keenly on this subject, and I feel we cannot spend our money better; it cannot be spent to better advantage, break the Act though we may. I believe $100 spent on our school children to-day will be the best spent money we can spend. I am perfectly satisfied to make some sacrifice; I am satisfied to give my lot to my children any time if I thought it would do them good, and I believe it does them good, and if we can establish in the minds of the boys and girls the idea of growing plants, it has a moral influence. There is no man or woman who studies flowers as they should be studied but is a better man or woman for it. The same thing applies to children. If we once establish in their minds the idea of floriculture I am satisfied they will be better boys and girls than they would be without it.

Mr. McCullough: I just want to remark that the Hamilton society has had a great deal of experience in distributing both plants and seeds to school children. We differ a little from Mr. Whyte's method; we have always called for volunteers and apportion them as far as possible. Then we have made arrangements with whoever was supplying us the seeds that any child

who has been left out, but really wants to grow plants, can have them for a nominal sum. As far as prices go we have never given money prizes; we have always given plants or bulbs or something of that kind. Another thing we have encouraged is the competition between schools, one school against the others. We have always given prizes for the best school exhibit; each school exhibit competed separately. The first year, for instance, we gave 500 bulbs to the school which had the best exhibit, and when they got the 500 bulbs there was not a bed on the school grounds to put them in, and the Board of Education was forced to make the bed to plant those bulbs, and that bed has had to be kept planted ever since. I just wanted to point out just wherein we differ a little from Ottawa. We probably distributed to the school children four or five years.

Prof. H. L. Hutt, Guelph: I am pleased with the discussion we have had on this subject. I think there is nothing our horticultural societies can take up of more importance than the interesting of the young people in floriculture and horticultural work. I believe it is at the basis of civic improvement work. It is sometimes hard to get the older people to fall in line as we would like them to, but if we can get these young people interested there won't be the difficulty in the future for working up a civic improvement movement. We have had some experience at the Guelph Horticultural Society. It started about four years ago, and distributed, I think, about a thousand geranium plants to the children of the schools, to all the different ward schools throughout the city, and the separate schools. That was held only under the auspices of the Horticultural Society. We had those plants brought to the City Hall and judged there in the afternoon and had a distribution of prizes in the evening. We had a fine display, and the hall was packed in the evening about seven or eight hundred young people, but there were not enough teachers or parents there to keep things in order and it has been described since as a "howling" success. The children were all so interested and so keen to express to each other how they had succeeded during the summer that it was pretty hard for a chairman to hold them in, and there was a murmur all over, and we had to do the best we could to get the prizes distributed. We learned that the best way is to work through the school authorities, and since then we have got the school authorities to help us in the distribution. We buy the seeds, bulbs, plants, or whatever they may be, and take them to the school and have them distributed through the teachers, through the different grades throughout the schools. We tried to get as many grades as possible taking part in it, from the youngest to the oldest. We distributed with the seeds carefully prepared directions, the same as Mr. Whyte has. I think it is well not to leave them to depend on their memory, but to give them a little printed circular, which they can keep for reference, giving full directions for the care of their plants. In September the plants are brought to the Central School—they have a large room there where the plants are brought and judged—and the prizes are awarded in connection with what they call the commencement exercises in the fall of the year, so that they came in as a very pleasant feature, and the flower display is held at the time of those exercises. We give no money prizes, but prizes in the way of something that will encourage them in the future. We have given this year *The Canadian Horticulturist* to a number of those getting the first prize, and along with that some of the finer plants, either palms or ferns, or some nice house plants or bulbs, using bulbs that can be used for forcing work throughout the winter, so that they are encouraged to carry out their floriculture throughout the winter. Instructions are given as to how to care for these bulbs. This

has worked out most successfully. We have tried a number of different plants, but the geranium among the house plants is a good one to work on. Of the seeds we have tried Asters, sweet peas, and some of the different annuals, but the Aster makes an excellent one for that work. I think that every society throughout the Province can well afford to devote some of its funds to this work. I do not think that a society can employ its funds to better use than in encouraging this work among the school children. (Applause.)

Mr. Stephens, Orillia: I am diffident in giving my experience in the Horticultural Society after hearing so much from other gentlemen. Seven years ago we thought it well to interest our school children in the matter of nature study, and we therefore put on four or five prizes in connection with the courses for that year. It was very successful. The next year we added another feature for collections of wood showing the grain. Year by year we added something to it, until we had five or six matters of that description, and last year—1905—we thought we would take up the matter of flowers grown from seed. At the annual meeting in January I brought it up before the board, and they agreed with me, and gave me a free hand to do what I thought fit. We were short of funds; we had no surplus, which I think a society such as ours never should have so long as they pay their annual expenses. I went to the school board and told them what I wanted to do, and asked them what they would do for us. They said, "How much do you want?" I said, "I think about $12 would buy all the seeds we want," and they passed an order giving it to us. I arranged for four hundred packages of seeds through a local dealer, and these were distributed in April, with a circular giving full instructions, and they were distributed, I believe, to such as would ask for them and guarantee to take care of them. I know that during the summer they took a lot of interest in caring for the plants, and in September, when we had the fall show, the Horticultural Society taking the horticultural department in connection with the Agricultural Society—I am afraid we can't do that any more—and I think 360 exhibits were made of these different flowers. There were four varieties of seeds; we had three large school buildings and two sections for each school, junior and senior, but the senior grade of the Central School was left out altogether, as we thought the boys and girls a little too old. We had a most magnificent building, but unfortunately our exhibition building was taken down and we could not spare the room. Next year we hope to take it up as before. It has had a very beneficial effect on the boys and girls, boys especially. It used to be that people growing flowers and fruit were not sure but that any night there would be vandals breaking through and stealing. There has been nothing of that kind for the last two or three years. The boys understand what it is to own flowers of their own, and they have a fellow-feeling for others and respect their rights.

Mr. Woodroofe: I was very much pleased with the remarks made by Prof. Hutt. I fully agree with him that unless we enlist the sympathies of the parents and teachers that we can hope for very little success. Some of you possibly noticed a slight discrepancy between what I said in asking you to call upon Mr. Scarff to speak and what was actually said. The fact of the matter is, I am perfectly in accord with what Mr. Scarff said as to the success of our society in distributing the plants and seeds, etc., but I am a little doubtful as to the great benefit derived from it. Of course, we have no proof of the success of these plants, bulbs, and seeds. The fact of the matter is, a number of these distributions were made with the express stipulation that the school children should exhibit them at our annual exhibition. To give you an idea of the success of that part of it I may say that I think

it was the year before last something like three thousand Gladioli bulbs were distributed among our children, and there were not twenty spikes of Gladioli exhibited at our show. I think the results in Asters and geraniums were somewhat similar. It is not the fact that the children do not take these, but they do not seem to take the trouble to bring them and show us the success of our distribution. Whether the fact is attributable to our not giving money prizes is a question. There is no doubt of it that the early associations of children very much affect their tastes, and I was very much struck with this when I was listening to Mr. Murphy, from Simcoe. Now, the young people in Simcoe have had an object lesson before them for the last thirty years. The public schools of that town have had grounds surrounding them kept quite as nicely as any private grounds, and, in fact, fit, I think, for any competition; therefore it would go somewhat to show that whether the children will show interest in the distribution of plants and flowers, may be attributed somewhat to the surroundings in which they find themselves.

Mr. Whyte: I would like to emphasize what Prof. Hutt says on the absolute necessity of enlisting the sympathy of the teachers and the school authorities. If you do not do that the thing will be a failure. I must confess I have not done it to my own satisfaction at all, but I find it is absolutely necessary. Every year I get the permission of the Inspector to address the staffs of the schools and I asked them to see that the children do not forget to enter and neglect the work.

The President: We have this afternoon the presence of the Deputy Minister of Agriculture, Mr. James. We are highly honored in having him with us, as this is the fourth series of meetings that have been held in the city during the week in connection with the Ontario Horticultural Exhibition. The Fruit Growers, the Bee Keepers, and the Vegetable Growers have met here, and now the Horticultural Societies have sent their representatives here this afternoon. In all of the other three cases there has been a commercial aspect in connection with their meetings that is absent in this. We are not here, any of us, for any pecuniary advantage that we can secure by the progress and development of this work in which we are engaged. I think, therefore, it is very highly pleasing to see so many people gathered here, very largely, I suppose, perhaps, altogether, at their own expense, to discuss matters for the bettering and advancing the work of the horticultural societies of the Province. The discussions during the day have been very valuable, and I think that they will be made more prominently so by the generosity of the Department of Agriculture in providing for the taking down and the printing and distributing of reports of this meeting. No doubt the meeting before it closes will take some formal action in the way of extending thanks to the department for their liberality in this respect, and for the promise we have for the future, of which we have not been able to avail ourselves to-day, for the appropriation for the making of our meetings more interesting and profitable. However, I take it upon myself when asking Mr. James to speak, to express to him the feeling of gratitude that we have to the Department for all the work they have done and the interest they have shown in the work of the horticultural societies of the Province. (Hear, hear.) When it has been our duty as representatives of this association to call upon the Hon. Mr. Monteith or Mr. James we have found willing ears to consider the requests we have made, and, as you know, in most cases they have been granted.

Mr. C. C. James, Deputy Minister of Agriculture: When your president invited me to come down and attend your meeting this afternoon he did not couple with that any promise or threat that he was expecting anything in

the way of a speech or address. I supposed at the time that he simply wished me to come down and see what a progressive, fine looking lot of men you were, and so, not knowing that I would be able to get away from the office to come down, I prepared nothing. There was just one remark that your president made that, it seems to me, might be enlarged upon or some exception might be taken to it. He said there was no commercial aspect in connection with your association. The luxuries of one generation become the necessities of the next, and we are very rapidly finding that flowers and beautiful surroundings, which a few years ago perhaps might have been considered luxuries, are now being considered as necessities, and the great floral industry of the country is very rapidly being placed upon a purely commercial basis, and it will not be very long before we have to take into consideration the value of our annual production of plants and flowers, which a short time ago we considered simply and solely ornamental. Apart from that, even those who are not interested in the direct production under glass or in the open air of flowers for sale, there is a very important commercial aspect to this work, which you yourselves well know in your own towns. The beautifying of your own home certainly adds to the commercial value of the property. We have been watching, so to speak, at a distance the work of the horticultural societies of this Province. I think you will admit that we have not interfered with your work in any way; we did not think there was any necessity of interfering with your work, and you have at last, of your own accord, got this association together and seem to be conducting it in an able manner. It is just possible we may step in and take part in your work, not that we wish to get any glory out of it after you have done the work, but as you will have noticed, the agricultural and horticultural work is becoming more and more specialized. A few years ago we simply had large organizations covering the whole field, but the development of specialties has been followed by the organization of special associations, and I think we have at last got the field that is our particular province to look after pretty thoroughly organized. I do not know just what we need to have organized next. This week we have no less than four of these organizations meeting in Toronto, and it is just barely possible you may find it necessary in time to split up into two further organizations dividing the amateur from the professional. The development of work along these lines has necessitated the organizing of associations to look after the particular interests that are concerned, and so you have found it necessary or advisable to form this organization. We have been watching it. It seems to be doing very good work, indeed, and this year, when you asked the Minister for some special consideration, there was no hesitation on his part when the memorandum was properly laid before him in acceding to that request. It is not much, but perhaps you were shrewder than some other people in not asking more. Whether you get more will depend not on what you ask for, but on what you do. I can say this on behalf of the Minister, that if you should need more for legitimate work you will get it, but you will have to prove the value of your organization and the work you are undertaking. The discussion this afternoon is one that is intensely interesting.

For a great many years we have been talking in the Agricultural Department of the necessity of getting hold of the young people. As you are aware, our Farmers' Institute work, for instance, has been engrossed entirely with the education of the men and women; and, as I have pointed, that is a case of working from the wrong end entirely. We simply take a man full grown, or a woman full grown, and say, "Here is your organization —your Farmers' Institute or Woman's Institute," and we have been neglect-

ing in this country almost entirely—and I think it is to our discredit—we have been neglecting the younger people. We have waited until they get to middle age before we provide them with facilities to become particularly instructed along the lines of their life work. In this work on horticulture and floriculture, especially among the boys and girls of our public schools,

School Gardens are an Excellent Means of Interesting Children in Flowers.

you are beginning not at the wrong end, but at the right end. It is a work to be encouraged. I would not be sorry to see every dollar granted to your association spent in that way. It is work that would probably in the near future be productive of more than money spent in any other direction. I do not know why two or three seemed to venture to suggest that perhaps they

might not be spending the money in the right way by spending it in that direction? Was there any particular reason?

The PRESIDENT: In discussing the Act this morning there is one clause of it that says that not more than one-third of the total receipts shall be expended upon any one of the seven objects of the horticultural societies, and the fear was that if the expenditure of one-third was exceeded the grant would be forfeited, and they would be penalized for spending so much in one direction.

Mr. JAMES: You had a pretty long discussion, I understand, in connection with the Act. That Act, as well as other similar Acts, was the outcome of long consideration and work on the part of your secretary and a good many deliberations on the part of Mr. Cowan, the Minister of Agriculture, myself, and some others; but you will please understand this, that law is not inexorable. It is not the law of the Medes and Persians; we do not put it out as perfect. It would be strange if we do not find it necessary to modify it, to change it, or to interpret it liberally. There is where the Department has the opportunity, and I think you will find in the interpretation and enforcement of that Act you will be met with fair liberality on the part of the Minister and the Department. The only object, of course, that the Department should have would be the encouragement of horticulture along the best and most feasible lines, and if that Act will not help us, let us know what we should have, and we will try and make it better. (Applause.)

The PRESIDENT: I am sure we have been very gratified at what we have heard from Mr. James, and especially his assurances in his last remarks that the Department would be generous in the interpretation and enforcement of this Act, and that their object, like our own, is to secure the best work in the best way. What perhaps is most feasible in one locality may be somewhat less so in another, but the Department, I am sure, will be quite generous and considerate in the interpretation of the Act.

POSSIBLE LINES OF WORK.

Just before the convention closed a brief discussion took place in regard to lines of work that might be followed by the association. Mr. Dickson, of Hamilton, thought the association should publish, in its annual report, lists of varieties of flowers and shrubs, with notes thereon, that had been grown by members of horticultural societies.

The opinion was expressed by Mr. R. B. Whyte, of Ottawa, that a two-day meeting should be held each year, so that there would be more time for discussion of the papers read and reports submitted.

Major H. J. Snelgrove suggested that the Superintendent of Farmers' Institutes should endeavor to secure capable speakers for meetings of horticultural societies.

A motion, moved by Mr. Diamond and seconded by Rev. A. H. Scott, expressing appreciation of the improvements made in *The Canadian Horticulturist*, and of the work it has done for the advancement of horticulture in Ontario, was adopted.

The officers of the association were requested to endeavor to secure capable speakers for the meetings of such societies as might apply for them.

ANNUAL REPORT

OF THE

Bureau of Industries

FOR THE

Province of Ontario

1906

PART I.—AGRICULTURAL STATISTICS.

PART II.—CHATTEL MORTGAGES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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To the Honourable

WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned begs to present herewith for the consideration of Your Honour the Report of The Ontario Bureau of Industries for 1906.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

Toronto, 1907.

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Ontario Bureau of Industries.

PART I.—AGRICULTURAL STATISTICS.

THE WEATHER.

Under their respective headings, summary tables of temperature, precipitation, and sunshine are herewith presented:

TEMPERATURE. The following table gives the temperature of the Province in each month for the last ten years, together with the mean annual temperature: also the mean temperature for the six months April–September—practically the growing season—together with the average for the twenty-five years 1882-1906:

Month.	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1882–1906
	°	°	°	°	°	°	°	°	°	°	°
January	26.6	13.6	10.8	18.5	18.7	19.0	21.9	18.7	20.2	19.5	17.3
February	18.4	12.7	8.8	21.8	18.1	13.0	17.1	15.2	22.0	21.8	17.5
March	23.4	27.2	26.2	37.4	35.0	26.9	20.5	25.8	35.6	29.0	26.3
April	43.3	41.1	37.5	43.3	43.6	45.0	44.8	44.5	42.1	42.7	41.7
May	53.5	52.7	56.1	56.8	53.2	54.6	54.6	55.7	55.5	52.9	53.9
June	65.0	62.8	63.3	60.8	59.2	65.8	64.1	64.8	65.6	60.9	63.9
July	68.2	68.7	66.2	67.3	68.6	71.9	68.2	67.5	70.2	71.9	67.9
August	70.0	66.1	63.3	62.4	63.5	67.5	70.9	68.5	67.7	64.2	65.7
September	63.3	60.9	57.2	59.0	59.0	60.1	62.3	56.2	61.8	60.8	58.9
October	47.6	47.5	45.0	49.2	46.3	48.5	55.2	50.0	48.7	50.1	46.8
November	35.0	33.7	33.6	32.3	41.0	31.9	35.3	38.0	34.9	34.9	34.9
December	19.9	27.0	17.6	17.7	20.9	22.7	24.7	25.1	22.8	24.6	23.5
Annual mean	44.5	42.8	40.5	43.9	43.9	43.9	45.0	44.2	45.6	44.4	43.3
Mean for six months, April to September	60.5	58.7	57.3	58.3	57.9	60.8	60.8	59.5	60.5	58.9	58.7

The mean temperature of the year 1906 was 44.5 degrees, being 1.7 degrees above that of the preceding year, and 1.3 degrees above the mean temperature for the twenty-five years. The average temperature for the six months April-September was also higher than usual. March, May, and December were the only months which failed to equal the average of their respective temperatures for the twenty-five years period. January, for a winter month, and August, for a summer month, had abnormally high mean temperatures.

SUNSHINE. In the following table the averages of sunshine are, as usual, derived from the records of the weather stations at Woodstock, Toronto, Lindsay, Kingston and Ottawa:

Months.	Sun above horizon.	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1882–1904
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
January.....	285.7	88.6	80.6	71.0	54.4	84.1	59.7	77.1	90.8	76.2	70.4	75.2
February....	291.4	135.4	116.1	109.0	90.9	127.7	115.7	109.8	112.8	69.3	93.7	103.3
March.....	369.9	133.0	157.7	109.2	99.8	138.8	96.9	161.4	133.2	157.5	148.3	144.4
April.....	406.4	201.6	169.8	124.6	184.7	144.1	154.5	214.0	223.2	230.2	174.2	188.3
May.....	461.1	218.6	206.5	211.4	284.1	207.8	177.3	247.9	210.9	196.3	196.9	217.5
June.....	465.7	228.8	210.4	228.9	196.0	199.3	365.5	305.3	278.2	237.1	212.8	242.0
July.....	470.9	270.3	236.8	237.3	261.2	241.5	268.2	266.3	302.2	207.8	258.7	264.5
August.....	434.5	255.7	261.6	256.6	180.6	245.2	206.0	271.4	262.1	225.2	262.4	242.2
September..	376.3	237.7	194.6	172.8	203.7	149.3	199.7	190.0	164.4	202.4	237.1	189.4
October.....	340.2	125.7	151.8	124.4	152.4	119.1	163.0	164.0	141.7	118.2	261.0	138.7
November ..	286.9	84.2	95.9	100.1	114.0	76.6	80.3	82.4	78.6	89.0	60.8	78.5
December...	274.3	65.6	63.8	60.9	59.5	71.0	62.9	46.6	60.2	56.6	40.6	60.5
Total for the year	4463.3	2045.2	1945.6	1806.2	1881.3	1799.5	1852.7	2136.2	2058.3	1965.9	1923.9	1944.6
Total for 6 months, April–Sept	2614.9	1412.7	1279.7	1231.6	1310.3	1187.2	1274.2	1494.9	1411.0	1399.0	1349.1	1344.0

The year 1906 had 2,045.2 hours of sunshine, or fully one hundred hours more than the average for the last twenty-five years. More than two-thirds of this increase must be credited to the six growing months, April-September. March, June and October, however, each averaged less hours of sunshine than usual.

PRECIPITATION. The fall of both rain and snow for the five winter months' including November, 1905, and March, 1906, is given in the following table for ten years, together with the average for the twenty-five years, 1882-1906. An inch of water is the equivalent of ten inches of snow:

Year.	November.		December.		January.		February.		March.		Total for five months.	
	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.	Rain.	Snow.
	in.	in.	in.	in.	in	in.	in.	in.	in.	in.	in.	in.
1906.....	1.96	6.0	1.22	8.8	1.34	10.2	0.46	8.1	1.13	11.6	6.11	43.7
1905.....	0.33	4.3	0.55	14.6	0.22	23.2	0.06	20.5	0.98	3.6	2.14	66.2
1904.....	0.98	7.2	0.71	24.1	0.48	24.9	1.04	14.7	1.78	9.4	4.39	80.3
1903.....	1.60	4.0	1.06	14.6	0.78	19.8	1.31	13.6	1.92	1.7	6.67	53.7
1902.....	1.25	8.0	1.85	14.2	0.10	20.4	0.56	12.1	2.34	2.5	6.10	57.2
1901.....	2.99	10.4	0.51	8.6	0.58	18.8	R	17.6	1.60	13.1	5.68	68.5
1900.....	1.13	1.0	2.15	14.5	0.72	15.8	1.68	26.8	0.53	18.8	6.21	76.9
1899.....	1.67	9.6	0.74	24.6	1.50	13.2	0.76	8.0	1.78	22.1	6.45	77.5
1898.....	3.40	8.9	1.73	17.5	1.47	18.2	0.60	18 9	2.42	1.0	9.62	64.5
1897.....	2.51	6 2	5.37	9.6	1.15	17.3	0.89	14.1	1.52	12.7	6.44	59.9
1882–1906..	1.98	8.0	1.26	15.0	0.94	20.1	0.87	16.1	1.20	10.7	6.25	69.9

The total amount of rainfall during November-March was 6.11 inches, which was about normal, while the total snowfall was only 43.7 inches, or 26.2 inches less than the average for the five months. The figures for the three months December-February show that the snowfall in that period was only about half of the average, while March had nearly an inch more of snow than usual.

The six months, April-September, however, comprise what is regarded as the growing season for most crops, and the following table gives the rainfall of these months for the last ten years, and also the average for the twenty-five years, 1882-1906:

Months.	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1882-1905
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
April.....	1.41	1.04	2.22	2.32	2.12	2.26	1.44	1.10	1.45	2.52	1.26	1.61
May..	2.34	3.32	3.36	1.82	2.44	3.67	2.03	3.43	2 43	3.38	2.10	2.83
June.....	4.52	3.53	3.20	3.83	3.92	2.14	2.83	2.46	2.83	2.83	2.39	2.98
July.....	2.93	3.55	3.50	4.09	5.49	3.90	3.96	2.78	1.11	5.36	2.79	2.94
August.....	2.57	3.26	3.76	3.77	2.02	2.78	2.15	0.81	2.64	2.62	2.86	2.63
September..	2.41	2.42	3.24	2.21	3.53	2.78	2.73	3.72	2.94	0.83	4.47	2.65
Total for 6 months	16.18	17.12	19.28	18.04	19.52	17.53	15.14	14.30	13.40	17.54	15.87	15.64

During these six growing months the rainfall was 16.18 inches, which was a little above the average for the same period for the twenty-five years. There is little out of the ordinary to note in the table, the most interesting fact being that there was relatively less rainfall than usual during April and May, when most of the spring seeding is done.

VEGETATION.

When correspondents wrote about the middle of May, field and forest growth was considered to be fully a week behind. Warmer weather was then prevailing, and it was pointed out by some correspondents that the backward state of the season had the redeeming feature of giving much assurance of freedom from spring frosts.

Spring Seeding. Except in the more eastern counties along the St. Lawrence seeding was well advanced, and in many cases completed, by the middle of May. The seed-bed was as a rule in excellent condition, and although growth has been slow, the general opinion was expressed that the "catch" would turn out to be first-class. The acreage of spring grains is estimated to be fully up to the average, with an enlarged area of oats and peas. In the Essex district an increased acreage of tobacco is also expected.

THE GRAIN CROPS.

Fall Wheat. The Crop Bulletin issued in November, 1905, contained the following: "The area of new fall wheat is larger than that of last year, taking the Province over, although a few counties may show a decrease. Sowing ranged from the last week in August to the first week in October, but the bulk of the crop was got in between the 8th and 19th of September. The ground was in good condition at seeding, and timely rains gave the crop a splendid

start. The appearance of the young wheat when correspondents reported about the beginning of November was most favorable, although fears were expressed by some that there had been a somewhat too vigorous growth, giving the crop rather too much head. Scattering reports were made of the presence of the Hessian fly, white grub and wire-worm, but not to a serious extent. Dawson's Golden Chaff is still the most popular fall wheat sown, but some correspondents complain of this variety as having a tendency to smut."

The remarkably open weather, affording little or no covering of snow most of the time, and changes of temperature varying from extremely mild conditions to intense cold, led growers of fall wheat to fear the outcome. The cold, dry, and generally backward spring was also unfavorable to the crop. However, the general situation in the third week in May was characterized as being better than was expected, although reports varied greatly in describing the condition of the fields. Some accounts were enthusiastic over the promising state of the crops, while others from the same district spoke of failures more or less marked. High lands did well compared with flat or low-lying places; rich, sharp, and well-drained soils also prospered. Fields sown early did much better than those got in later, and wheat sown on sod was markedly ahead of that grown on stubble land. The bulletin went on to say: "A considerable area at scattered points will be plowed up and resown to other crops, but in many cases barley will be drilled into the "patchy" spots. The presence of the wire-worm was pointed out by a number of correspondents, but no serious injury was reported from that or other insects. The most favorable reports, relatively, regarding fall wheat come from Lake Erie and Lake Ontario counties."

According to returns made in August, the unusually open winter was most trying to fall wheat, but the crop picked up wonderfully in the spring, and improved steadily until cutting. It was harvested under favorable conditions, the straw standing up well, and the weather being dry and bright. The quality of the grain, as a rule, was plump and well up to weight, and the yield per acre was considerably over the average. Very little rust was reported, and only occasional mention was made of injury from insects. Cutting ranged from the 10th to the 28th of July, according to locality.

The favorable reports at harvesting of both the yield and quality of fall wheat have been borne out in the threshing. Several correspondents in November reported the grain as running well over standard weight. But slight mention was then made of injury to the crop by insects or rust.

The New Fall Wheat. The November bulletin contained the following regarding the fall wheat then in the ground: "The splendid yield of fall wheat this year, and the almost entire disappearance of the Hessian fly, have encouraged farmers to sow a slightly extended acreage of wheat this fall. The crop was got in as early as August 25th, and sowing continued as late as October 10th, the bulk being got in in the first half of September. The seed bed, as a rule, was rather dry and lumpy for a good catch, but timely rains helped the crop to pick up, and most correspondents report the young wheat as looking healthy and ready for the winter. Very little mention was made of the Hessian fly or wire-worm."

Spring Wheat. This variety of wheat is not much in favor, more especially in the western part of the Province. Harvesting was in progress as correspondent wrote, about the beginning of August, and a good yield was promised, although some of the crop had been "lodged" by rain storms. Several correspondents stated that "Wild Goose" was the only variety of spring wheat now grown.

In referring to fall wheat, the November bulletin said: "The crop was up to the mark in yield, but while much of it is described as good in quality, some shrunken grain is also reported. Spring wheat appears to be steadily going out of favor as an Ontario crop."

Barley. A large yield of plump grain, much of it discolored, but all of it good for feeding live stock (which is now its chief use in Ontario), was the record of the barley crop of 1906, according to the August crop bulletin. As with the other spring grains, there was considerable "lodging," but taken as a whole, the crop was then regarded as a success.

November reports concerning barley were to the effect that the crop, like fall wheat, was one of the best in years. Although much of the grain was discolored, its plumpness rendered it first-class for feeding purposes. The straw was long, and some "lodging" was reported.

Oats. The August bulletin said: "This crop suffered more than any other from rain storms, and much of it was so badly lodged as to render cutting very difficult. Grasshoppers also attacked oats in different localities, more especially in the Lake Erie counties, and the crop suffered slightly from rust and wireworms. Notwithstanding these drawbacks, there will be a comparatively large yield per acre, and the crop may be classed among the more successful ones."

Later reports, sent in about the beginning of November, stated that the cutting of oats was a difficult matter owing to so much of the crop being lodged by rain storms. There was a good yield of both grain and straw. Reports varied as to the quality of the grain, the weight running from light to heavy. Grasshoppers also attacked the crop, but very little injury from rust or smut was complained of. Even with all the drawbacks against it the crop was above an average one.

Peas. For the last five or six years the depredations of the pea weevil (commonly called the "bug") were so great that in nearly every section of the Province the acreage given to peas shrank to alarmingly small proportions. Last year, however, the weevil gave but little trouble to pea growers, and this season the pest is usually mentioned only to remark its absence. Some correspondents, writing early in August, spoke of mildew and of injury from rain in low-lying places, and complaint was also made by some that the intense heat at podding time prevented the peas from fully developing; but the general tone of the reports was most hopeful, and the pea crop was then regarded as one of the best for years. Correspondents also predicted a larger acreage for next year.

Reports in November regarding peas differed considerably Taken all together, however, the crop was regarded as an improvement in quality compared with more recent years. The presence of the dreaded weevil or "bug" was reported only at scattered points, and the growing of peas was said to be coming again into general favor.

Beans. The growing of beans as a field crop is confined chiefly to Kent and adjoining counties. The crop was not fully matured as correspondents wrote about the beginning of August, but gave promise of more than an average yield per acre. The raising of beans for selling in a green state to canning factories is on the increase.

Rye. Only a small acreage of rye is now grown in Ontario for the grain. Most of it is fed green, and in some cases it is cut for hay. The crop was regarded early in August as a comparatively light one. November reports had but little to say regarding rye, but the quality was described as being from fair to good.

Buckwheat. This crop is now raised in Ontario by comparatively few farmers, and even then only in small acreages, but where grown it has done very well this season.

Corn. The August bulletin contained the following regarding this crop: "As a Simcoe county correspondent has tersely put it, 'This has been a corn summer.' All things point to a large yield, both for husking and the silo, as the crop is reported to be earing remarkably well. Some complaints have been made of cut-worms or grubs attacking the young corn early in the season, more especially where planted on sod, and rain injured the crop on low lands; but, taking the Province as a whole, corn responded to the warm weather which has prevailed since June, and made a splendid growth. The crop is considered to be well forward, and unless frosts are unusually early all classes of corn ought to mature in perfect condition."

"This has turned out to be a remarkably fine crop both as to yield and quality," said the November bulletin. "The plant had most favorable growing weather all along, was well cobbed and fully matured, and for both husking and silo purposes was all that could be desired. Only a little of the latest was caught by frost."

HAY AND CLOVER.

May reports regarding clover were to the following effect: "Like fall wheat, clover suffered from lack of protection of snow during the winter, and much of the crop was heaved, resulting in considerable loss. Low-lying spots were also badly winter-killed, and some had to be plowed up. Old fields showed most injury, the young clover coming through in remarkably good form. Notwithstanding the many complaints of poor fields, there are nearly as many favourable accounts of a splendid showing. In fact, the two winter crops of clover and fall wheat never have called forth more varied reports as to prospects, correspondents in the same locality widely differing as to the condition of both."

The August bulletin had the following to say of hay and clover: "Owing to the lack of snow last winter, pastures were much exposed, and considerable winter-killing resulted, old fields suffering most. Timothy came through much better than clover, and made a much better growth relatively during the summer. The yield per acre is below the record of recent years, although making a fair show compared with the average for the last twenty-four years. The hay crop has been generally well saved, however, and its excellent feeding quality is favourably commented upon by a number of correspondents. Hardly any mention was made of the midge. Alsike is reported as yielding well."

Clover Seed. Winter-killing and midsummer drouth told on clover fields reserved for seed, and the crop was rather a light one. When correspondents wrote, under date of November 1st, but little of the crop had been threshed owing to the rush of other farm work. While not at all general, the midge was at work in various localities, both east and west. Alsike, however, had turned out well where reported upon.

FIELD ROOTS.

Potatoes. The August bulletin said: "Much difference of opinion is expressed regarding the present condition and the probable yield of potatoes. While there will be some good yields in every section of the Province, the presence of the blight will tend to keep down the average. The Colorado beetle was out in force, as usual, but while Paris green is used by every farmer against this pest, only a few of the more progressive men spray with Bordeaux mixture

for the blight. A few correspondents speak of rot, but no general complaint has been made."

The following was the statement concerning potatoes in the November bulletin: "Reports concerning potatoes are varied. While a number of correspondents speak of rot, others call attention to its absence this season. The bulk of the returns are to the effect that the crop will not give an average yield, and the tubers will be rather small in size, but of good quality. A blight of the vines before maturity occurred in some sections, and a 'white grub' was complained of by several correspondents in some of the West Midland counties. However, with less rot reported than in recent years, the outlook for potatoes is on the whole comparatively favorable. All the crop was stored as correspondents wrote."

Carrots. Correspondents reporting upon roots have but little to say about carrots as a field crop, but the few reports regarding their condition were favorable. The acreage of carrots is steadily decreasing.

Mangels. These roots, like all others, made a poor start in the spring, but picked up later on. They are rather smaller in size than usual, but otherwise were regarded as a good crop when correspondents wrote in November, more especially in the West Midland counties. They were well secured for the winter.

Turnips. There was a poor catch at seeding, and the crop was regarded as being very backward early in the season. Timely rains in June helped turnips considerably, but drouth later on threw them back again, and a light yield has been the result. There were also some reports of injury from aphis and from rot. When correspondents reported at the beginning of November, the storing of turnips was not completed.

Sugar Beets. This crop is coming more into favour for feeding purposes. Like other roots, they were hardly as large in size as ordinarily, but in other respects were regarded as a fair average crop. They were pulled and stored in good time.

FRUIT AND FRUIT TREES.

The condition of orchards was thus described in the May bulletin: "Winter losses of orchard trees are smaller than for several years. In various quarters a number of old plum trees are reported as having succumbed, but opinion was expressed that the severe winters of the two or three years immediately preceding was the cause. Except in a few localities in the Lake Erie counties, peaches appear to have sustained but little injury. There has been a generous amount of blossoming on nearly all classes of orchard trees, and should heavy rains keep off during the period of 'setting' a large fruit crop may be looked for. Complaints of the presence of San Jose scale, the oyster-shell bark louse, and black-knot are made, and orchardists will have to continue the fight against them if the best results are to be had."

The August bulletin thus summarized the fruit situation: "Harvest and fall apples will be plentiful, but standard winter varieties like the Spy and Greening, will be rather scarce. The fruit, however, will be a better sample than for years, being much freer from spot. Plums have not been so light in yield for several seasons; in some districts there will be hardly any for sale. There will be a good yield of peaches. Pears will not be a full crop; the trees have also suffered from blight in different localities. Cherries have borne well, but black-knot is still complained of. In some of the Lake Erie counties the Rose Beetle did much injury to grape vines early in the season, but in the other parts of the Province the yield of grapes is expected to be a fair one. There was an average supply of berries, strawberries being the least plentiful."

According to the November bulletin, orchard conditions were as follows: "Considerable injury to orchards was done in the second week of October by an early but heavy fall of moist snow, which settled on trees still laden with leaves (and some with fruit), the result being that many branches and limbs were broken off. In some of the Lake Erie and Lake Ontario counties complaints are made of injury to trees by the San Jose scale, and the borer is also reported as doing harm. Otherwise orchards appear to be in good condition for wintering. Fall apples were so abundant that many of them could not be used. Winter varieties have not given a full yield, but many heavy shipments are reported, and there is still a surplus on hand. Apples suffered less from spot or scab than in recent years, but the codling moth was too common, and there are many complaints of wormy fruit. Plums were never scarcer, but all other fruits were more or less equal to the demand."

THE SUGAR BEET INDUSTRY.

The following statistics relate to beets grown for the production of sugar in the Province of Ontario.

The period covering the growing of the beets and their manufacture into sugar is called a "campaign." The first sugar campaign in this Province was that of 1902-3, when four factories were making. During the summer of 1904 the Wiarton factory was compelled to suspend operations owing to financial difficulties, and the Dresden factory was removed to the State of Michigan, leaving but two sugar factories operating in the Province, namely, those of Berlin and Wallaceburg. The following table shows the quantity of beet-root sugar made in Ontario by the factories in operation. It will be observed that more sugar was made in 1906-7 than in any previous campaign:

Campaign.	Factory.	Output of Sugar.
		lbs.
1902-3	Ontario Sugar Co., Berlin	6,063,926
	Dresden Sugar Co.	3,763,987
	Wallaceburg Sugar Co.	3,606,604
	Wiarton Sugar Co.	1,565,000
	Total	14,999,517
1903-4	Ontario Sugar Co., Berlin	7,059,695
	Dresden Sugar Co.	2,094,999
	Wallaceburg Sugar Co.	4,230,422
	Wiarton Sugar Co.	981,000
	Total	14,366,016
1904-5	Ontario Sugar Co., Berlin	7,260,637
	Wallaceburg Sugar Co.	7,574,708
	Total	14,835,345
1905-6	Ontario Sugar Co., Berlin	9,510,753
	Wallaceburg Sugar Co.	11,276,066
	Total	20,786,829
1906-7	Ontario Sugar Co., Berlin	10,341,907
	Wallaceburg Sugar Co	10,721,107
	Total	21,063,014

There were 3,200 farmers growing sugar beets for the campaign of 1905-6' and the area of beets raised by them was 10,647 acres, yielding 100,085 tons, or 9.55 tons to the acre. Each grower averaged three and a third acres of beets. The patrons of the Berlin factory were scattered over eighteen counties.

There is a steady demand in the Berlin district for beet pulp for cattle feeding at fifty cents a ton, but in the Wallaceburg district the bulk of the pulp is allowed to go to waste.

MISCELLANEOUS.

LUCERNE. This plant, which is also known as alfalfa, is referred to in most favorable terms by several correspondents, as it permits of frequent cutting during the growing season, and is very nutritious. It thrives best on high land.

RAPE. The growing of rape is approved of by a number of correspondents who speak from personal experience. It is used for finishing off lambs in the fall, and cattle and other live stock are turned upon it with advantage. The spreading habit of the plant has a tendency to kill weeds by smothering them out.

TOBACCO. August reports regarding the condition of tobacco varied. The plants got a rather poor start, and the white grub also caused some loss early in the season. The favorable weather of July, however, enabled the crop to pick up wonderfully, and in most cases a good return was looked for.

November reports concerning tobacco were on the whole favorable. The plant matured well, and was harvested under ideal conditions, the leaf being remarkably free from sand and dirt. A little planted late got caught by frost. The yield was expected to average about 1,200 lbs. to the acre, which would bring the owner about $90 where the quality was good. A few fields ran as high as 2,000 lbs. to the acre. Prices were not so high as in 1905, but the increased yield would offset the difference. A number of sales by individual growers were reported ranging from 10,000 to 20,000 lbs.

The Leamington Post gave the following comparative statement of the 1905 and 1906 crop of leaf tobacco in Essex and Kent counties, Ontario, and also that of the Province of Quebec:

	1905. lbs.	1906. lbs.
Mersea	1,750,000	1,850,000
Gosfield North	650,000	750,000
Gosfield South	1,250,000	1,200,000
Colchester	1,200,000	1,500,000
Malden	50,000	75,000
Sandwich	25,000	50,000
Pelee Island	400,000	400 000
Kent County	600,000	1,300,000
Scattering	150,000	250,000
Walker Bros.	200,000	200,000
Totals	6,275,000	7,575,000
Quebec	3,100 000	3,750,000
Total	9,375,000	11,325,000

FLAX. The acreage of flax is not so large as in former years, but the general tone of the reports this season is encouraging. Good weather prevailed when the crop was pulled, which ensured a good quality of fibre.

Weeds. Farmers appear to be getting more thoroughly awake to the importance of abating the weed nuisance. The necessity of a better supervision of seed is shown by a correspondent in the county of Carleton, who asserts that Penny Cress was spread through that locality with clover seed, which it somewhat resembles. A correspondent in the county of York states that Ragweed is proving to be the worst weed in that section in both field and roadside. A correspondent in the county of Wellington thus decribes his method of getting rid of the dreaded Russia Sow Thistle:—

> "We have succeeded in killing the Russian Sow Thistle by giving the land a fair coat of manure and sowing rape, cultivating with the scuffler twice, and feeding the rape to lambs. We plow light after harvest, and later on plow deeper. We have also had good success in killing the thistle with buckwheat, plowing in the fall and twice in the spring, and sowing three pecks to the acre about the middle of June; we had 40 bushels to the acre. This land and the rape land had hitherto been almost useless, the thistle having had possession."

The Department during the year issued a revised bulletin on Weeds (No. 128), which has been sent to a large number of rural school teachers. Copies are still available for any farmers who apply.

Fall Plowing. Correspondents reporting about the 1st of November were about equally divided as to whether the progress of fall plowing is well advanced or backward. Reports differed greatly even in the same localities. It would seem, however, as if the comparatively hot and dry weather of August and September had rendered the land rather hard for plowing, but that later, more favorable conditions prevailed, and a large area was still being turned under as correspondents wrote. The rush of other fall work, and the absence of skilled labor, also had a tendency to delay plowing.

Threshing and Marketing. The November bulletin said: "All over the Province threshing was well advanced, as correspondents reported. Wheat ha not been so largely marketed as usual, prices not being considered as satisfactory by those who could afford to hold, while others are keeping it over to feed stock unless prices rise. Barley is now mainly fed to hogs and other live stock, and while considerable oats have been marketed much more will be used on the farm. Several correspondents claim that farmers are too busy with fall work to go to market, preferring to wait for the sleighing season."

Farm Supplies. The following appeared in the November bulletin: "In every section of the Province there has been enough hay and grain for local needs, but as a rule there is not much to spare, as the feeding of live stock is more engaged in than formerly. The failure of the turnip crop, and the necessity of feeding later than usual owing to the backward spring, also made great inroads upon the grain and fodder supply. Most of the fat cattle have been disposed of, but a considerable number of store cattle are on the grass for July and September delivery. Several correspondents claim that only a sufficient number of cattle will be left on hand for butchers' needs.

Farm Improvements. More or less activity in farm improvements is reported all over the Province. An immense amount of re-fencing has been done, some form of wire being substituted for the old rail or "worm" fences. A considerable number of new dwelling houses and barns have been erected, but much more has been done in the way of building stone or concrete foundations under remodelled houses and barns, in the latter case affording more comfortable and convenient stabling for live stock. More work would have been done in all these lines but for the scarcity of labor.

LIVE STOCK, THE APIARY, AND THE DAIRY.

Live Stock. The May bulletin contained the following reference to live stock: "The open winter appears to have favored live stock. There was sufficient provender of all kinds except roots, as many of the turnips rotted, although the backward spring caused an unlooked for draft to be made upon surplus fodder. Horses came through the winter in splendid condition, except where troubled with a light form of distemper, and the cool, dry weather kept them in good condition during spring work. More mares have been bred of late than formerly, and while some correspondents speak of an unusual mortality among colts, the general tone of the reports is favorable in this regard. Owing to the high prices prevailing for horses they are commanding better care and closer attention. Cattle are described as being rather thin, but healthy. Several correspondents claim that this class of live stock was turned out upon the grass this season before there was a good bite for them. Sheep are now more in favor, and are giving good satisfaction. They would be more largely kept but for the dog nuisance. Lambs are coming in good and strong, to quote a correspondent. Swine are kept in large numbers, and have wintered well, but there are reports of heavy mortality among spring litters, a large number of young pigs dying when about a month old. But for the fact that many farmers have lost confidence in the stability of the market, the output of hogs would be immensely increased."

Pastures were in excellent condition up to the latter part of July, but were beginning to show need of rain when correspondents wrote early in August. Live stock generally were then in good form, except that cows had suffered much from the horn-fly, and had consequently lost in milk in many sections of the Province. No serious cases of disease among live stock were reported. Prospects were good for fall and winter keep, as there would be plenty of coarse grains, a good supply of ensilage corn, and an abundance of straw, although hay was likely to be somewhat scarcer than in more recent years.

The November bulletin said: "Pastures were rather short in midsummer, but picked up later on. Live stock generally are in a healthy condition. The breed and quality of horses are just now commanding more attention from farmers. Cattle are perhaps a trifle thin, but otherwise are in excellent shape for wintering. Sheep have been in demand, and are growing in favor, more especially as the price of lambs ranged high. One correspondent in Muskoka speaks of losses by bears, but several complaints come from some of the oldest settled districts of sheep being killed by dogs. A special enquiry as to the present condition of the sheep industry is now being made by the Department, and a bulletin will be issued soon on this subject. Hogs are somewhat scarcer than usual at this time of year, but are being sent steadily forward to market. There is a much smaller supply of hay on hand than for years, mill feed is high in price, and more care and judgment than usual will have to be exercised to carry live stock through until spring. The splendid crop of corn comes in most opportunely; but while there are many champions of the silo, a number of correspondents are disposed to considerably discount its benefits, especially when farm labor is so scarce. This winter will afford many practical tests of the value of corn ensilage in helping live stock through economically."

Poultry. Farmers are giving much closer attention to the raising of poultry, and the comments of correspondents regarding this industry are more sympathetic and enthusiastic than formerly. Both eggs and dressed poultry have been in strong demand at paying prices, and there has been more profit than usual in their handling. More attention is being given to the matter of breed, and the industry is now a recognized branch of progressive farming.

VALUES PER HEAD. The statistics of live stock will be found on pages 37-41. The following table gives the average value per head of stock on hand for the past ten years:

Classes of Live Stock.	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897
Horses:	$	$	$	$	$	$	$	$	$	$
Working horses	122	116	111	103	93	85	79	72	65	61
Breeding mares	128	121	114	106	95	87	81	74	68	64
Colts	83	78	73	67	62	57	53	49	44	41
Stallions	488	453	406	388	373	347	368	332	303	283
Cattle:										
Working oxen	46	42	44	45	42	42	42	46	43	42
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Milch cows	35 99	35 06	34 70	34 15	32 96	31 74	31 01	30 31	28 28	26 13
Store cattle	32 72	32 54	32 10	31 71	30 02	29 25	29 38	29 27	26 49	23 89
Other cattle	16 85	16 47	16 06	15 82	15 01	14 14	13 67	13 09	11 91	10 62
Sheep:										
Over one year	6 19	5 64	5 37	5 36	5 40	5 31	5 17	5 01	4 76	4 37
Under one year	4 01	3 59	3 34	3 35	3 37	3 37	3 31	3 15	2 91	2 62
Swine:										
Over one year	17 12	15 51	15 88	16 28	16 00	14 34	12 09	12 23	12 63	11 40
Under one year	5 38	4 97	4 90	5 07	5 15	4 81	4 24	3 92	3 91	3 67
Poultry:	cts.	cts.	cts.	cts	cts.	cts.	cts.	cts.	cts.	cts.
Turkeys	85	78	76	69	66	65	65	65	63	64
Geese	81	72	65	61	61	60	59	57	55	56
Ducks	42	38	36	33	33	31	30	29	.....	.....
Other fowls	31	30	28	27	26	24	23	22	22	21

BEES AND HONEY. "The season has been a rather poor one for the apiary," said the August bulletin. "Swarming was uneven, and on the whole unsatisfactory. Clover was a disappointment; basswood was better, but only fair; buckwheat promises well. The weather was too wet for best results at the gathering time, and it is estimated that the average yield per colony will be only about 35 pounds. Bees are otherwise in a thrifty condition."

November returns were thus summarized: "The honey crop has been a failure this season. The average yield per colony is small, and the quality of the honey, generally speaking, is poor, both as regards color and flavor. The cold, wet season at the time of the main honey flow was the chief cause of disappointment. The situation was somewhat relieved by the good buckwheat bloom, but notwithstanding this aid some feeding back will be necessary in many apiaries. Otherwise bees are reported to be in good condition."

THE DAIRY. Dairying has been a most profitable branch of agriculture on account of the high prices prevailing for both butter and cheese. The former appears to be gaining upon the latter, as many farmers now use cream separators, sending the cream to the butter factory, and feeding the skim milk to calves and pigs. The milk flow was hardly as full or as steady as during the three or four years immediately preceding, but good prices have fully compensated. Shorthorn cows and their grades are still most commonly used, but Holsteins are gaining much in favor in dairy districts, followed by Ayrshires (particularly in the St. Lawrence counties) and Jerseys.

The statistics of the Cheese and Butter output of the year have always been in the nature of estimates, as many of the factories and creameries fail to make returns on schedules provided. An attempt is being made this year to collect the information through the Dairy Instructors. As soon as their efforts are completed the results will be published in bulletin form.

LABOR AND WAGES.

May returns as to conditions governing farm labor and wages were to the following effect: The quality and cost, and not the quantity of labor, is the great question facing the Ontario farmer to-day. The exodus of native sons to the Canadian West and to New Ontario has drained the older parts of the Province of a large number of skilled agricultural workmen, and while the tide of immigration has brought in many to take their place, few of the newcomers prove to be up to the mark from a Canadian standpoint. However, some of them are reported to be 'making good,' and a more hopeful tone regarding the promise of raw labor is observed in the remarks of correspondents. Rates of wages continue high; in fact, many report that farmers cannot pay such wages and succeed. Enlarged implements and the use of more horses in field work help some out of the difficulty. Domestic servants are, if possible, harder to secure than ever before."

The August bulletin remarked: "Notwithstanding the large number of immigrants coming to Canada, farm labor in Ontario has been almost as scarce as ever. However, the reference to the quality of the old country help is more favorable than formerly. The high rates of wages during the harvest—ranging from $1.25 to $2 a day, with board, and from $20 to $40 a month—have forced farmers to do much of the work within their own families, the use of modern machinery enabling women to help in the fields during a rush. Farmers also exchange work with one another to mutual advantage. The comparatively light crop of hay this year lessened the demand for harvest help to some extent. On the other hand, "the attractions of the West, the lakes, and the mines," as one correspondent put it, has lured many of our most skilled young men from Ontario farms.

The labor situation was thus summed up in the November bulletin: "In only a few localities was the supply of farm labor equal to the demand. The continued exodus from this Province to the Northwest and New Ontario is given as the chief cause of the scarcity of able men to help on the farm. While some correspondents belittle the English immigrants as farm laborers, others say that there has been a great improvement in quality during the last year or so. The general opinion is that wages will remain at about the present rate, as farmers cannot afford to pay more. The situation is being somewhat relieved by the use of improved farm machinery, and by turning more land into pasture. It is almost impossible to secure domestic servants on the farm, as girls seem to prefer town life."

The following table gives the average rate of wages paid farm laborers by the year and by the month, with and without board, for ten years; also the monthly wages paid domestic servants on the farm:

Farm Laborers.	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897
Per year in yearly engagements:	$	$	$	$	$	$	$	$	$	$
With board	196	192	190	183	165	165	155	149	148	144
Without board	298	296	291	274	268	263	248	243	246	236
Per month for working season:	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
With board	22 19	21 61	21 49	19 44	18 52	17 78	16 57	15 38	15 31	14 29
Without board	31 90	31 32	31 02	28 04	27 51	27 05	25 73	24 93	25 44	24 47
Domestic servants per month	8 92	8 86	8 07	7 84	7 15	6 91	6 65	6 19	6 09	5 97

TEMPERATURE OF 1906.

TABLE I.—Showing for each month the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario in 1906; also the annual mean for each station.

Months.		Saugeen.	Birnam.	London.	Woodstock	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst	Ottawa.	Rockliffe.
		o	o	o	o	o	o	o	o	o	o
January	Highest	58.8	61.3	60.0	60.0	69.0	56.5	55.4	51.0	52.0	43.0
	Lowest	5.6	8.7	5.5	5.0	8.0	5.2	— 8.0	—15.0	—10.0	—24.0
	Mean highest	36.3	35.3	36.5	36.5	39.3	37.0	33.4	32.3	29.2	25.0
	Mean lowest	21.9	25.1	23.2	22.5	25.9	24.9	17.2	13.9	12.3	2.2
	Monthly mean	29.1	30.2	29.9	30.0	32.6	31.0	25.3	23.1	20.8	13.6
February	Highest	51.5	59.7	57.0	58.5	61.0	53.3	59.6	52.0	46.0	46.0
	Lowest	—17.1	—12.1	—16.5	—15.0	—10.0	—12.1	—24.0	—32.0	—19.0	—40.0
	Mean highest	29.7	28.3	31.4	29.9	33.3	31.0	28.3	27.4	25.9	23.5
	Mean lowest	10.7	13.0	10.9	10.2	13.8	13.6	6.8	2.0	5.7	— 6.3
	Monthly mean	20.2	20.6	21.2	20.6	23.5	21.8	17.5	14.7	15.8	8.6
March	Highest	47.8	46.0	48.0	46.0	52.0	49.0	49.0	45.0	46.0	46.0
	Lowest	0.0	— 7.7	— 7.0	— 3.0	— 2.0	— 0.8	— 5.9	—17.0	— 0.0	—28.0
	Mean highest	31.0	29.5	32.5	30.7	33.4	33.2	31.6	30.9	30.3	29.7
	Mean lowest	16.3	17.7	18.2	16.7	21.7	20.8	14.5	9.9	15.2	3.1
	Monthly mean	23.7	23.6	25.3	24.4	27.6	26.8	23.1	20.4	22.7	16.4
April	Highest	70.0	72.3	74.0	73.0	75.0	72.0	71.7	72.0	72.0	74.0
	Lowest	21.2	21.2	25.5	26.0	25.0	26.0	20.8	18.0	20.0	11.0
	Mean highest	50.8	54.1	56.8	55.7	56.5	53.6	54.2	51.2	53.6	51.8
	Mean lowest	32.6	34.6	33.5	31.9	36.7	35.7	32.6	29.2	32.9	29.1
	Monthly mean	41.6	44.3	45.2	43.8	46.6	44.5	43.4	40.2	43.4	40.5
May	Highest	84.0	83.0	84.5	83.0	88.0	86.0	87.6	84.0	88.0	84.0
	Lowest	30.1	30.0	29.0	28.0	35.0	30.5	27.0	25.0	32.0	26.0
	Mean highest	61.2	64.9	67.0	64.2	66.4	64.2	66.4	62.5	64.6	61.2
	Mean lowest	41.6	45.7	44.6	42.8	44.8	44.3	41.7	40.1	43.2	38.5
	Monthly mean	51.4	55.3	55.8	54.5	55.6	53.2	54.0	51.3	53.9	49.8
June	Highest	86.1	90.0	89.5	88.8	96.0	91.0	86.7	85.0	86.0	88.0
	Lowest	34.6	38.2	37.5	35.0	40.0	42.2	38.7	32.0	40.0	33.0
	Mean highest	72.6	74.8	76.3	74.4	77.5	75.1	75.8	74.5	77.1	75.7
	Mean lowest	53.9	56.3	56.4	53.3	55.9	56.1	54.2	52.0	57.2	52.3
	Monthly mean	63.2	65.5	66.3	63.8	66.7	65.1	65.0	63.2	67.0	64.0
July	Highest	86.9	90.0	88.0	83.8	92.0	92.1	86.6	85.0	89.0	93.0
	Lowest	43.3	45.3	44.0	46.5	48.6	50.8	47.5	43.0	47.0	39 0
	Mean highest	75.5	77.4	78.6	77.8	81.9	79.9	79.9	78.9	81.0	81.7
	Mean lowest	57.8	58.7	57.4	55.6	60.4	60.3	57.0	54.5	60.0	53.2
	Monthly mean	66.5	68.0	68.0	67.6	68.9	69.6	68.5	66.7	70.5	67.4
August	Highest	86.0	88.0	89.0	87.0	96.0	89.0	90.2	90.0	95.0	94.0
	Lowest	41.1	52.1	46.0	46.0	46.0	52.0	45.7	39.0	48.0	42.0
	Mean highest	78.1	79.5	80.6	79.3	81.9	81.1	80.9	81.0	82.8	79.3
	Mean lowest	60.5	62.7	60.5	58.2	63.1	62.6	57.9	55.3	60.8	54.6
	Monthly mean	69.3	71.1	70.6	69.6	72.5	71.0	69.4	68.2	71.6	67.0
September	Highest	85.0	88.0	87.0	86.0	93.0	90.4	87.8	88.0	89.0	90.0
	Lowest	37.1	40.0	36.0	34.5	42.0	41.7	37.4	35.0	38.0	31.0
	Mean highest	72.6	75.8	76.0	74.4	78.1	75.2	74.6	73.2	73.8	72.2
	Mean lowest	54.0	55.0	51.4	50.2	54.7	54.5	50.6	49.9	51.0	47.1
	Monthly mean	63.4	65.4	63.7	63.2	66.4	64.2	62.6	61.6	62.4	59.8
October	Highest	76.0	72.1	74.0	71.5	75.0	73.0	74.0	74.0	73.0	76.0
	Lowest	26.1	23.0	26.0	21.0	28.0	26.4	24.0	26.0	27.0	22.0
	Mean highest	59.5	55.7	58.6	55.7	58.4	56.9	57.2	56.0	55.1	55.2
	Mean lowest	40.0	41.5	38.9	37.0	41.7	41.3	37.9	36.7	38.5	34.8
	Monthly mean	48.7	48.6	48.8	47.2	49.5	48.3	47.5	46.4	46.8	44.0
November	Highest	55.8	56.1	59.0	56.0	63.0	58.6	55.9	54.0	49.0	48.0
	Lowest	17.2	15.0	21.0	19.0	23.0	21.6	14.1	11.0	13.0	2.0
	Mean highest	43.0	43.2	45.1	41.5	45.0	43.6	40.3	40.1	37.8	36.9
	Mean lowest	29.6	30.6	29.5	28.4	32.7	31.2	26.1	25.8	26.8	22.4
	Monthly mean	36.3	36.9	37.3	35.5	38.8	37.1	33.2	33.0	32.3	29.6
December	Highest	44 0	48.1	47.0	47.0	53.0	49.0	41.9	42.0	36.0	37.0
	Lowest	— 1.0	8.0	2.0	— 5.0	0.0	— 8.1	—18.3	—26.6	—20.0	—36.0
	Mean highest	31.6	31.9	32.6	30.1	31.3	30.8	24.5	25.7	19.4	17.4
	Mean lowest	16.6	21.4	18.5	15.6	18.7	15.7	6.8	6.2	5.6	— 3.3
	Monthly mean	24.1	26.7	25.5	24.0	25.0	22.9	15.5	15.9	12.5	7.1
Annual mean		44.3	46.4	46.5	45.3	47.8	46.3	43.7	42.1	43.3	39.0

AVERAGES OF TEMPERATURE FOR TWENTY-FIVE YEARS.

TABLE II.—Showing for each month the monthly average for the highest, lowest, mean highest, mean lowest and mean temperature at the principal stations in Ontario, derived from the twenty-five years 1882-1906; also the annual mean at each station for the same period.

Months.		Saugeen.	Birnam.	London.	Woodstock.	Stoney Creek.	Toronto.	Lindsay.	Gravenhurst.	Ottawa.	Rockliffe.
		°	°	°	°	°	°	°	°	°	°
January	Highest	44.5	46.2	46.3	46.0	51.3	44.9	41.7	41.5	40.2	37.5
	Lowest	— 6.7	— 9.0	— 9.2	—11.5	— 4.2	— 7.3	—19.9	—26.4	—21.5	—31.3
	Mean highest	28.2	26.9	28.6	27.7	32.4	28.9	24.2	24.0	19.8	18.1
	Mean lowest	13.2	14.5	13.7	11.3	18.1	14.2	6.6	8.9	1.6	— 6.1
	Monthly mean	20.8	20.8	21.8	20.7	23.4	22.0	15.6	14.5	11.1	6.0
February	Highest	44.7	47.1	46.2	45.6	48.4	44.2	42.3	42.2	40.3	41.6
	Lowest	—11.3	—12.9	—12.0	—11.8	— 6.5	— 8.1	—18.1	—25.9	—21.0	—35.2
	Mean highest	27.5	26.7	28.3	27.7	31.1	28.6	25.3	25.0	22.0	21.9
	Mean lowest	10.9	12.7	11.5	10.3	15.1	13.1	5.7	3.5	3.3	— 0.7
	Monthly mean	18.9	19.6	20.5	20.2	22.8	21.2	15.8	14.7	13.1	8.5
March	Highest	53.5	57.6	57.6	55.7	59.1	53.1	50.5	50.1	47.1	50.1
	Lowest	— 3.6	— 3.5	— 2.3	— 2.6	5.1	3.5	— 7.2	—13.5	— 8.6	—24.4
	Mean highest	31.8	35.8	37.2	35.9	39.6	35.9	33.8	33.5	32.3	32.9
	Mean lowest	17.6	20.9	20.1	18.5	24.8	21.5	15.6	12.9	11.7	6.7
	Monthly mean	26.1	27.9	29.3	28.0	31.0	28.8	24.6	23.6	23.7	19.9
April	Highest	73.3	77.0	76.1	74.8	77.5	70.9	74.4	71.2	74.0	74.9
	Lowest	15.5	17.8	18.6	17.5	23.4	21.2	14.1	11.7	15.2	6.7
	Mean highest	49.7	52.6	53.2	52.6	53.8	51.0	52.2	50.2	51.3	51.5
	Mean lowest	31.4	34.1	32 7	31.9	36.1	33.9	30.8	29.0	31.4	26.4
	Monthly mean	40.0	43.2	44.0	42.8	44.0	42.3	41.1	39.7	41.6	38.6
May	Highest	79.9	82.5	82.3	81.0	84.4	78.5	82.5	81.4	83.1	84.8
	Lowest	28.7	29.2	30.0	29.3	34.0	32.1	28.2	27.4	31.2	24.2
	Mean highest	61.3	65.7	66.6	64.7	65.8	62.5	66.0	64.1	66.4	65.8
	Mean lowest	41.4	44.6	44.2	42.7	45.5	44.0	42.1	41.6	43.4	38.5
	Monthly mean	50.9	55.0	56.4	54.4	54.9	53.2	53.8	52.8	55.6	51.9
June	Highest	85.1	88.2	87.8	87.1	91.7	86.8	88.5	87.0	87.9	89.3
	Lowest	37.6	37.6	38.5	38.6	42.9	42.5	39.2	36.8	42.2	33.7
	Mean highest	70.8	75.5	76.1	75.4	77.5	73.9	75.9	74.9	75.9	75.6
	Mean lowest	50.9	53.6	53.5	51.9	55.9	53.8	51.4	51.1	54.0	48.0
	Monthly mean	60.6	64.4	65.9	64.5	66.0	63.6	63.6	63.1	65.5	61.7
July	Highest	87.3	92.1	91.5	90.1	95.4	90.5	91.2	89.2	91.1	90.8
	Lowest	43.3	42.8	44.0	44.1	49.0	48.1	43.7	43.1	47.1	40.0
	Mean highest	77.3	79.8	80.0	79.4	82.8	78.6	79.8	78.3	79.0	78.2
	Mean lowest	55.9	57.2	57.2	55.6	61.1	58.4	55.4	55.5	58.2	52.9
	Monthly mean	65.2	68.4	69.7	68.3	71.1	68.3	67.3	66.9	68.8	65.0
August	Highest	86.0	89.2	89.5	88.6	93.0	87.8	89.4	87.7	88.6	88.2
	Lowest	42.0	42.2	40.5	41.7	46.8	46.6	40.5	40.0	43.5	37.4
	Mean highest	73.8	77.1	77.6	77.3	80.7	76.3	77.5	76.1	76.2	75.2
	Mean lowest	55.1	55.8	54.4	52.1	59.0	53.1	53.3	53.2	55.4	50.2
	Monthly mean	65.9	66.2	66.9	65.8	69.5	66.3	64.7	64.3	66.0	61.5
September	Highest	84.6	87.2	86.1	85.8	90.4	84.4	86.0	83.8	84.5	84.6
	Lowest	33.7	33.5	31.6	31.2	36.6	36.4	31.0	31.2	33.0	29.0
	Mean highest	68.4	70.8	71.3	70.4	74.2	69.2	69.6	68.8	68.5	67.8
	Mean lowest	49.7	50.8	49.5	47.3	53.0	50.7	46.8	47.1	47.9	43.5
	Monthly mean	58.3	60.7	60.8	59.4	62.4	59.7	57.6	57.5	58.2	61.1
October	Highest	74.2	75.8	75.1	74.2	77.1	72.4	73.8	72.5	70.7	72.9
	Lowest	24.7	24.8	23.6	22.7	26.2	26.1	21.1	21.6	23.2	17.6
	Mean highest	56.3	57.1	57.7	56.4	61.0	56.0	55.3	55.3	53.8	53.3
	Mean lowest	39.5	40.6	38.2	36.8	41.7	39.9	36.2	36.9	36.6	33.0
	Monthly mean	47.1	48.8	48.3	47.1	50.1	47.9	45.1	45.5	45.4	42.2
November	Highest	60.8	62.6	62.1	61.5	65.9	59.9	59.2	58.7	57.0	55.9
	Lowest	13.6	12.8	12.0	10.8	16.8	13.9	4.8	6.8	5.8	— 1.1
	Mean highest	43.3	42.7	44.1	42.7	47.0	43.4	40.4	40.4	38.4	36.8
	Mean lowest	29.9	30.6	29.2	27.7	32.4	30.5	25.8	25.9	25.2	21.6
	Monthly mean	36.1	36.7	36.9	35.8	39.3	37.0	32.9	33.1	31.8	28.9
December	Highest	49.4	49.0	51.6	49.1	54.9	47.9	44.4	44.4	42.0	40.6
	Lowest	— 1.1	— 1.8	— 2.9	— 3.8	0.9	— 2.3	—13.8	—13.9	—16.7	—27.2
	Mean highest	33.2	31.7	33.0	32.0	36.0	33.4	28.7	29.1	24.5	23.5
	Mean lowest	20.1	20.7	19.7	17.8	22.6	20.4	13.1	12.5	8.8	3.5
	Monthly mean	26.6	26.2	26.8	25.7	29.6	27.2	21.3	21.3	17.0	13.3
Annual mean		43.0	44.8	45.6	44.4	47.0	44.8	42.0	41.4	41.5	37.6

RAIN AND SNOW.

TABLE III. Summary of the total fall of rain and snow, and the number of days on which rain and snow fell in Ontario during the year 1906 at stations reporting the whole year, and the average for the Province.

Stations.	Rain.		Snow.	
	Inches.	Days.	Inches.	Days.
ALGOMA :				
Port Arthur	22.71	62	23.0	25
Bruce Mines	25.70	85	65.1	26
Cockburn Island	21.85	65	46.5	27
BRANT :				
Paris	30.22	86	30.0	14
Brantford.	27.46	43	25.5	15
BRUCE :				
Lucknow	28.44	91	99.2	56
N. Bruce	27.52	77	62.0	40
Saugeen	25.30	87	87.0	61
Wiarton	24.99	64	58.5	31
CARLETON :				
Ottawa	20.05	78	63.1	40
DUFFERIN :				
Orangeville	29.55	51	66.0	52
DURHAM :				
Port Hope	24.84	58	19.5	10
ESSEX :				
Cottam	30.41	96	17.5	18
Windsor	29.44	99	24.5	18
Wallaceburg	20.36	71	37.5	13
ELGIN :				
Port Stanley	31.53	126	40.5	43
Cowal	27.31	60	34.0	23
Port Burwell	27.42	84	30.9	22
FRONTENAC :				
Arden	30.31	102	53.0	29
Kingston	26.31	94	59.7	60
Sydenham	31.34	82	43.0	16
GREY :				
Owen Sound	26.01	81	91.9	59
Meaford	26.63	84	69.5	35
HALTON :				
Georgetown	30.66	111	9.5	53
HASTINGS :				
Madoc	35.08	91	58.1	41
HURON :				
Goderich	16.93	51	54.5	25
Clinton	29.98	115	78.5	41
KENT :				
Chatham	24.57	52	21.5	7
LAMBTON :				
Wyoming	21.92	54	58.0	25
Sarnia	18.80	34	61.1	23
Birnam	30.38	85	91.4	35
LANARK :				
Montague	20.83	49	26.0	14
LEEDS :				
Lansdowne	23.93	48	25.4	17
Westport	29.86	69	35.7	32
LENNOX :				
Parma	29.39	71	41 0	23
MIDDLESEX :				
London	34.68	103	75.3	40
Westminster	23.27	62	56.5	18
MUSKOKA :				
Emsdale	37.17	95	78.2	39
Gravenhurst	29.46	79	66.9	45
Bala	30.45	76	81.0	86
Huntsville	33.22	54	66 8	38

Stations.	Rain.		Snow.	
	Inches.	Days.	Inches.	Days.
NIPISSING :				
Calvin				
Haileybury	18.24	79	104.0	56
NORFOLK :				
Port Dover	24.20	111	51.2	44
NORTHUMBERLAND :				
Wooler	30.53	69	26.5	15
OXFORD :				
Woodstock	33.78	108	35.3	23
Princeton	35.56	76	58.0	23
ONTARIO :				
Uxbridge	30.73	83	48.0	34
PARRY SOUND.				
Uplands	15.28	68	103.0	47
Parry Sound	36.68	80	79.0	36
PEEL :				
Alton	33.21	84	56.6	46
PETERBOROUGH :				
Peterborough	30 98	65	71.5	30
Lakefield	27.05	73	40.5	19
Otonabee	25.24	64	41.0	22
RAINY RIVER :				
Kenora	17.41	35	50.0	19
RENFREW :				
Clontarf	18.52	59	46.5	28
Rockliffe	13.85	59	59.1	39
Renfrew	17.29	59	64.4	31
SIMCOE :				
Orillia	23.12	48	59.1	26
Midland	25.83	70	42.8	28
VICTORIA :				
Lindsay	29.91	98	92.7	53
WENTWORT				
Stony Creek	35.50	76	35.5	15
YORK :				
Aurora	31.28	95	52.1	40
Scarboro	23.30	94	26.3	23
Deer Park	25.40	68	37.1	26
Toronto	27.21	109	37.7	44
Agincourt	20.11	50	40.1	23
Sutton West	32.15	97	24.0	19
WELLAND :				
Welland	27.07	86	56.5	26
Average for the Province				
1906	27.06	76	52.4	32
1905	24.90	78	64.3	39
1904	25.60	77	75.0	43
1903	26.44	78	69.8	40
1902	28.29	97	54.8	32
1901	24.12	79	76.3	43
1900	25.28	81	64.6	34
1899	25.13	87	60.5	54
1898	24.90	81	74.2	44
1897	28.30	88	73.0	49
1896	22.36	82	73.4	43
1882-06	24.56	87	73.6	40

RAIN AND SNOW.

TABLE IV.—Monthly summary of inches of rain and snow in precipitation in the several districts of Ontario in 1906; also the average derived from the twenty-five years 1882-1906.

Districts.		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
West and Southwest:		in.	.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Rain	1906	1.27	0.48	1.01	1.61	2.51	3.78	3.12	2.60	1.77	5.08	1.86	2.97	28.06
	1882-1906	1.09	1.26	1.36	1.83	3.20	3.09	2.97	2.60	2.57	2.78	2.27	1.56	26.58
Snow	1906	7.3	3.6	13.2	1.1	.....	.....	.....	.....	.....	8.0	1.6	9.0	43.8
	1882-1906	15.3	12.5	8.8	2.6	8	.....	.....	.....	.....	0.6	5.5	12.0	57.3
Northwest and North:														
Rain	1906	1.32	0.39	0.97	1.19	2.44	4.34	2.66	3.19	2.55	3.98	2.24	0.85	26.12
	1882-1906	0.76	0.53	0.99	1.42	2.70	2.89	2.94	2.83	3.09	3.05	1.87	0.99	24.06
Snow	1906	15.7	13.1	11.8	2.6	.....	.....	.....	.....	.....	4.1	5.1	14.8	67.2
	1882-1906	26.2	20.2	13.2	3.4	0.3	.....	.....	.....	.....	1.5	12.5	21.7	99.0
Centre:														
Rain	1906	1.46	0.50	1.33	1.70	2.61	4.12	3.87	2.30	2.32	3.94	1.75	1.47	27.37
	1882-1906	1.05	1.02	1.31	1.72	2.81	2.93	2.84	2.48	2.44	2.47	1.99	1.36	24.42
Snow	1906	8.0	4.9	13.0	1.7	.....	.....	.....	.....	.....	5.3	2.3	12.4	47.6
	1882-1906	17.9	14.5	9.7	3.0	0.1	.....	.....	.....	.....	0.6	5.4	11.4	62.6
East and Northeast:														
Rain	1906	1.31	0.49	1.20	1.13	1.79	5.83	2.07	2.19	2.99	4.02	2.20	1.46	26.68
	1882-1906	0.85	0.67	1.16	1.47	2.63	3.00	3.00	2.60	2.52	2.32	1.77	1.18	23.17
Snow	1906	9.7	6.8	8.5	1.3	.....	.....	.....	.....	.....	9.9	2.2	12.7	51.1
	1881-1906	21.0	17.3	11.0	3.2	0.1	.....	.....	.....	.....	0.9	7.5	14.5	75.5
The Province:														
Rain	1906	1.34	0.46	1.13	1.41	2.34	4.52	2.93	2.57	2.41	4.25	2.01	1.69	27.06
	1882-1906	0.94	0.87	1.20	1.61	2.83	2.98	2.94	2.63	2.65	2.66	1.98	1.27	24.56
Snow	1906	10.2	7.1	11.6	1.7	.....	.....	.....	.....	.....	6.8	2.8	12.2	52.4
	1882-1906	20.1	16.1	10.7	3.1	0.1	.....	.....	.....	.....	0.9	7.7	14.9	73.6

SUNSHINE.

TABLE V.—Monthly summary of bright sunshine at the principal stations in Ontario in 1906 showing the number of hours the sun was above the horizon, the hours of registered sunshine, the total for the year and the average derived from the twenty-five years 1882-1906.

Stations.		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
		hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
Sun above horizon		285.7	291.4	369.9	406.4	461.1	465.7	470.9	434.5	376.3	340.2	286.9	274.3	4463.3
Woodstock	1906	78.2	135.5	100.2	191.2	220.7	258.1	259.7	237.4	226.1	115.4	82.6	57.6	1962.7
	1882-1906	62.1	89.2	123.9	176.1	207.7	243.1	272.0	236.6	177.5	147.1	72.5	54.1	1861.9
Toronto	1906	88.0	138.7	116.2	205.2	223.5	210.5	260.3	251.4	243.8	128.8	81.3	68.7	2015.4
	1882-1906	79.3	108.1	150.4	194.3	221.1	256.5	280.5	251.5	211.5	147.6	83.1	64.4	2048.3
Lindsay	1906	81.4	140.4	137.7	208.8	209.1	202.0	264.3	233.3	260.3	130.1	82.6	72.7	2022.7
	1882-1906	74.3	105.1	153.6	196.4	213.8	243.7	259.9	242.6	197.3	136.2	71.2	57.1	1951.2
Kingston	1906	107.8	140.2	147.0	196.8	238.6	249.4	295.2	282.4	242.5	112.4	78.9	56.6	2147.8
	1882-1906	77.6	109.7	152.6	189.5	200.8	246.0	267.0	244.2	194.4	137.6	79.1	68.3	1966.8
Ottawa	1906	87.5	132.3	163.7	206.8	201.8	224.0	272.2	273.8	215.8	138.6	95.8	72.6	2084.9
	1882-1906	82.9	101.3	141.7	185.2	224.2	221.4	243.1	236.3	166.5	125.2	86.8	56.4	1874.0
Average of five stations	1906	88.6	135.4	133.0	201.6	218.6	228.8	270.3	255.7	237.7	125.1	84.2	65.6	2044.6
	1905	80.6	116.1	157.7	169.8	206.5	210.4	236.8	261.6	194.6	151.8	95.9	63.8	1945.7
	1882-1906	75.2	103.3	144.4	188.3	217.5	242.1	264.5	242.2	189.4	138.7	78.5	60.5	1944.6

TORONTO OBSERVATORY REGISTER.

TABLE VI.—Comparative Meteorological Register for the seven years 1900-1906, at Toronto Observatory in Lat. 43°. 40 N., and Lon. 5 h. 17m. 34.65s. W. Height above the sea 350 feet.

	1906	1905	1904	1903	1902	1901	1900
Average temperature	46°26	44°53	42°20	45°58	45°57	45°55	46°89
Difference from average (66) years	+ 1.87	+ 0.14	— 2.19	+ 1.19	+ 1.18	+ 1.16	+ 2.50
Thermic Anomaly (Lat. 43° 40')	— 4.76	— 6.49	— 8.82	— 5.44	— 5.45	— 5.47	— 4.13
Highest temperature	92.1	92.1	93.0	91.5	91.0	97.1	98.0
Lowest temperature	— 12.1	— 8.2	— 15.1	— 9.7	— 3.3	— 10.9	— 9.6
Annual range	104.2	100.3	108.1	101.2	94.3	108.0	107.6
Average daily range	16.73	17.01	17.29	16.68	16.81	16.90	16.70
Greatest daily range	36.9	35.6	36.0	34.5	33.2	43.0	37.6
Average height of barometer at 32° Fah	29.6577	29.6273	29.6380	29.6203	29.5940	29.5988	29.6213
Difference from average (65 years)	+ .0381	+ .0077	— .0184	— .0007	— .0256	— .0208	+ .0017
Highest barometer	30.505	30.493	30.449	30.309	30.394	30.328	30.224
Lowest barometer	28.752	28.840	28.752	28.742	28.712	28.868	28.802
Annual range	1.753	1.653	1.697	1.567	1.682	1.460	1.422
Average of cloudiness	0.57	0.58	0.60	0.61	0.62	0.61	0.57
Difference from average	— .04	— .03	— .01	.00	+ .01	.00	— .04
Average humidity of the air	77	78	79	76	77	76	76
Difference from average	0	—.1	+ 2	— 1	0	— 1	— 1
Resultant direction of wind	N 25° W	S 87° W	N 67° W	W	N 60° W	N 55° W	S 88° W
Resultant velocity of wind	2.64	2.73	2.09	2.45	2.53	2.99	3.09
Average velocity (miles per hour)	10.78	9.72	10.17	10.83	10.98	10.26	10.97
Difference from average	+ 0.37	— 0.64	— 0.19	+ 0.47	+ 0.62	— 0.10	+ 0.61
Highest velocity in month and year	49.0	54.0	50.0	40.0	44.0	45.0	44.0
Total amount of rain in inches	27.206	25.825	30.040	25.631	26.105	25.200	22.130
Difference from average (66 years)	— 0.136	— 1.245	— 2.970	— 1.439	— .965	— 1.870	— 4.940
Number of days of rain	109	97	100	100	116	102	99
Total amount of snow in inches	37.7	54.3	56.5	50.0	49.2	70.7	74.6
Difference from average (66 years)	— 28.94	—12.34	—10.14	—16.64	—17.44	+ 4.06	+ 7.96
Number of days of snow	66.64	49	53	52	37	54	42
Number of fair days	178	190	175	171	181	183	187
Number of days completely clouded	54	59	61	61	59	58	51
Number of auroras observed	2	6	2	5	2	2	3
Possible to see auroras (No. of nights)	13	196	177	184	185	201	224
Number of thunder storms	37	30	37	26	34	29	34
Number of fogs	19	23	26	22	31	29	29
Number of hours of bright sunshine	2016.4	2064.2	1964.9	2039.9	1958.9	1981.6	2305.0
Number of hours of possible sunshine	4464.1	4464.1	4475.2	4464.1	4464.1	4464.1	4464.1

RURAL AREAS ASSESSED.

TABLE VII.—Showing by County Municipalities the rural area of Ontario as returned by Municipal assessors for 1906; also the comparative totals for the Province for the ten years 1895-1906.

Counties and Districts.	Acres of assessed land.	Acres cleared.	Acres of woodland.	Acres of slash land.	Acres swamp, marsh or waste land.	Per cent. cleared.
Algoma	471,978	55,751	350,086	14,058	52,083	11.8
Brant	215,904	177,816	12,428	13,143	12,517	82.4
Bruce	922,537	548,303	165,596	73,332	135,306	59.4
Carleton	565,153	343,702	61,868	91,997	67,586	60.8
Dufferin	355 239	254,718	29,267	32,575	38,679	71.7
Dundas	236,715	165,976	39,715	18,231	12,793	70.1
Durham	370,264	298,212	36,646	15,285	20,121	80.5
Elgin	434,981	342,637	63,569	21,940	6,835	78.8
Essex	426,374	320,585	56,092	41,187	8,510	75.2
Frontenac	693,623	302,928	136,566	160,157	93,972	43.7
Glengarry	289,186	198,981	59,089	11,995	19,121	68.8
Grenville	272,833	179,507	35,073	23,145	35,108	65.8
Grey	1,072,554	687,165	145,321	65,264	174,804	64.1
Haldimand	281,202	236,176	34,265	5,728	5,033	84.0
Haliburton	577,934	40,376	318,208	33,971	185,379	7.0
Halton	224,805	172,589	21,302	24,994	5,920	76.8
Hastings	1,061,003	435,391	303,833	110,729	211,050	41.0
Huron	799,551	645.701	60,608	23,246	69,996	80.8
Kent	568,061	457,237	53,875	37,012	19,937	80.5
Lambton	659,851	471,079	76,670	89,864	22,238	71.4
Lanark	674,392	318,632	184,186	28,624	142,650	47.2
Leeds	468,227	265,547	98,855	39,045	64,780	56.7
Lennox and Addington.	442,099	273,437	106,870	15,293	46,499	61.8
Lincoln	190,526	163,190	17,205	6,945	3,186	85.7
Manitoulin	257,890	42,594	100,629	79,647	35,020	16.5
Middlesex	757,795	653,609	80,368	14,097	9,721	86.3
Muskoka	554,854	63,994	416,703	26,099	48,058	11.5
Nipissing	527,179	45,117	409,597	9,164	63,301	8.6
Norfolk	399,010	269,645	72,278	31,473	25,614	67.6
Northumberland	438,141	341,576	39,980	18,717	37,868	78.0
Ontario	502,438	367,379	26,322	49,505	59,232	73.1
Oxford	471,114	392,455	40,072	14,302	24,285	83.3
Parry Sound	601,515	73,587	400,727	42,309	84,892	12.2
Peel	288,203	260,014	12,243	6,455	9,491	90.2
Perth	517,756	446,377	35,609	21,452	14,318	86.2
Peterborough	572,113	257,218	125,146	95,897	93,852	45.0
Prescott	291,116	196,864	34,703	43,311	16,238	67.6
Prince Edward	231,568	192,889	20,781	2,834	15,064	83.3
Rainy River	266,563	16,887	202,935	20,978	25,763	6.3
Renfrew	1,024,670	353,447	384,523	72,286	214,414	34.5
Russell	253,573	120,993	40,842	70,031	21,707	47.7
Simcoe	965.567	632,865	122,073	138,821	71,808	65.5
Stormont	248,626	152,015	42,075	41,907	12,629	61.1
Thunder Bay	266,345	8,475	169,595	22,000	66.275	3.2
Victoria	602,274	282,589	48,858	88,868	181,959	46.9
Waterloo	307,064	251,307	33,214	4,852	17,691	81.8
Welland	227,613	185,275	21,354	6,798	14,186	81.4
Wellington	628,624	494,706	38,052	16,796	79,070	78.7
Wentworth	271,049	210,305	20,433	13,160	27,151	77.6
York	537,078	439,197	42,520	13,831	41,530	81.8
The Province :						
1906	24,284,730	14,107,015	5,449,125	1,963,350	2,765,240	58.1
1905	24,184,540	13,931,437	5,594,673	1,811,992	2,846,438	57.6
1904	24,138,846	13,809,368	6,670,902	.....	3,658,576	57.2
1903	23,930,512	13,643,069	6,719,720	.....	3,567,723	57.0
1902	23,727,010	13,570,229	6,684,512	.....	3,472,269	57.2
1901	23,636,178	13,436,482	6,715,872	.....	3,483,824	56.8
1900	23,568,104	13,297,206	7,127,363	.....	3,143,535	56.4
1899	23,451,092	13,111,292	7,149,404	.....	3,190,396	55.9
1898	23,392,584	12,993,614	7,198,905	.....	3,200,065	56.5
1897	23,360,428	12,853,081	7,294,026	.....	3,213,321	55.0

FALL WHEAT AND SPRING WHEAT.

TABLE VIII. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Fall Wheat and Spring Wheat for the year 1906, together with the totals for the Province for the past ten years and the average for the twenty-five years, 1882-1906; also the average yield per acre.

Counties and Districts.	Fall Wheat.				Spring Wheat.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
*Algoma	353	8,719	24.7	$ 6,164	714	14,994	21.0	$ 10,331
Brant	22,589	594,091	26.3	420,022	215	3,978	18.5	2,741
Bruce	32,550	781,200	24.0	552,308	1,427	27,398	19.2	18,877
Carleton	603	14,472	24.0	10,232	6,138	127,057	20.7	87,542
Dufferin	3,881	91,204	23.5	64,481	4,760	96,152	20.2	66,249
Dundas	338	7,098	21.0	5,018	557	11,641	20.9	8,021
Durham	7,714	182,050	23.6	128,709	10,906	189,764	17.4	130,747
Elgin	27,207	644,806	23.7	455,878	105	1,827	17.4	1,259
Essex	18,067	429,995	23.8	304,006	722	12,491	17.3	8,606
Frontenac	477	8,634	18.1	6,104	4,332	75,377	17.4	51,935
Glengarry	68	1,360	20.0	962	3,553	64,665	18.2	44,554
Grenville	166	3,934	23.7	2,781	1,176	24,931	21.2	17,178
Grey	26,607	678,479	25.5	479,685	5,156	100,026	19.4	68,918
Haldimand	30,464	664,115	21.8	469,529	392	6,703	17.1	4,618
Haliburton	30	660	22.0	467	629	10,064	16.0	6,934
Halton	24,069	488,601	20.3	345,441	795	12,720	16.0	8,764
Hastings	8,365	173,156	20.7	122,421	4,278	75,293	17.6	51,877
Huron	35,481	911,862	25.7	644,686	1,614	33,087	20.5	22,797
Kent	58,892	1,372,184	23.3	970,134	1,424	26,059	18.3	17,955
Lambton	35,613	772,802	21.7	546,371	641	11,218	17.5	7,729
Lanark	1,978	29,670	15.0	20,977	7,316	139,004	19.0	95,774
Leeds	1,117	24,239	21.7	17,137	2,176	40,691	18.7	28,036
Lennox & Add	1,558	32,562	20.9	23,021	3,493	59,730	17.1	41,154
Lincoln	16,733	364,779	21.8	257,899	172	2,374	13.8	1,636
Manitoulin	560	12,992	23.2	9,185	579	10,364	17.9	7,141
Middlesex	48,125	1,241,626	25.8	877,830	230	4,071	17.7	2,805
Muskoka	70	1,470	21.0	1,039	616	10,102	16.4	6,960
Nipissing	37	814	22.0	576	475	8,598	18.1	5,924
Norfolk	35,872	860,928	24.0	608,676	174	3,045	17.5	2,098
Northumberl'nd.	16,973	400,563	23.6	283,198	7,912	137,669	17.4	94,854
Ontario	12,096	322,963	26.7	228,335	15,026	305,028	20.3	210,164
Oxford	31,168	804,134	25.8	568,523	217	4,297	19.8	2,961
Parry Sound	18	378	21.0	267	586	11,954	20.4	8,236
Peel	23,742	508,079	21.4	359,212	1,153	19,832	17.2	13,664
Perth	35,927	887,397	24.7	627,390	801	16,260	20.3	11,203
Peterborough	12,160	294,272	24.2	208,050	5,513	105,298	19.1	72,550
Prescott	.....	.....	.....	.....	4,073	64,353	15.8	44,339
Prince Edward	2,409	49,625	20.6	35,085	1,064	17,982	16.9	12,390
Renfrew	617	11,846	19.2	8,375	30,204	576,896	19.1	397,481
Russell	270	5,940	22.0	4,200	1,677	30,354	18.1	20,914
Simcoe	72,885	1,785,683	24.5	1,262,478	9,555	177,723	18.6	122,451
Stormont	75	1,875	25.0	1,326	1,167	21,706	18.6	14,955
Victoria	9,800	228,340	23.3	161,436	9,631	174,321	18.1	120,107
Waterloo	32,390	796,794	24.6	563,333	126	2,545	20.2	1,755
Welland	19,806	441,674	22.3	312,264	248	3,472	14.0	2,392
Wellington	12,089	293,763	24.3	207,691	5,248	115,456	22.0	79,549
Wentworth	29,216	701,184	24.0	495,737	265	4,373	16.5	3,013
York	36,062	908,762	25.2	642,495	12,514	274,057	21.9	188,825
The Province:								
1906	787,287	18,841,774	23.9	13,321,134	171,745	3,267,000	19.0	2,250,963
1905	796,213	17,933,961	22.5	13,719,480	190,116	3,582,627	18.8	2,683,387
1904	605,458	9,160,623	15.1	9,041,535	225,027	3,471,103	15.4	3,269,779
1093	665,028	17,242,763	25.9	12,949,315	248,518	4,650,707	18.7	3,460,126
1902	748,592	20,233,669	27.0	14,305,204	303,115	6,048,024	20.0	4,209,425
1901	911,587	15,943,229	17.5	10,538,474	358,048	5,498,751	15.4	3,673,166
1900	1,068,640	23,369,737	21.9	15,517,505	376,905	6,940,333	18.4	4,684,725
1899	1,049,691	14,439,827	13.3	9,631,365	398,726	7,041,317	17.7	4,682,476
1898	1,048,182	25,158,713	24.0	17,460,147	389,205	6,873,785	17.7	3,756,659
1897	950,222	23,988,051	25.2	18,758,656	323,305	4,868,101	15.1	3,826,627
1882-1906	877,559	18,027,531	20.5	14,093,857	413,502	6,556,316	15.9	5,279,006

* Including Rainy River and Thunder Bay in this and succeeding tables.

BARLEY AND OATS.

TABLE IX.—Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Barley and Oats for the year 1906, together with the totals for the Province for the past ten years and the average for the twenty-five years, 1882-1906; also the average yield per acre.

Counties and Districts.	Barley.				Oats.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
Algoma	2,225	69,198	31.1	$ 31,139	17,458	665,150	38.1	$ 226,151
Brant	12,792	429,811	33.6	193,415	29,438	1,257,003	42.7	427,381
Bruce	23,724	749,678	31.6	337,355	102,230	3,772,287	36.9	1,282,577
Carleton	9,283	323,977	34.9	145,790	81,276	3,413,592	42.0	1,160,621
Dufferin	18,464	688,707	37.3	309,918	72,591	2,976,231	41.0	1,011,919
Dundas	4,159	134,752	32.4	60,638	37,193	1,562,106	42.0	531,116
Durham	29,853	907,531	30.4	408,389	58,333	2,216,654	38.0	753,662
Elgin	16,009	571,521	35.7	257,184	47,318	1,925,843	40.7	654,787
Essex	11,424	389,558	34.1	175,301	73,782	3,039,818	41.2	1,033,538
Frontenac	8,347	238,724	28.6	107,426	48,568	1,704,737	35.1	579,611
Glengarry	7,056	211,680	30.0	95,256	39,094	1,317,468	33.7	447,939
Grenville	3,178	89,302	28.1	40,186	33,664	1,272,499	37.8	432,650
Grey	54,974	1,196,111	34.2	538,250	144,432	5,618,405	38.9	1,910,258
Haldimand	8,294	255,455	30.8	114,955	35,876	1,363,288	38.0	463,518
Haliburton	601	19,172	31.9	8,627	6,625	220,613	33.3	75,008
Halton	11,121	379,226	34.1	170,652	26,286	1,138,184	43.3	386,983
Hastings	27,029	827,087	30.6	372,189	70,697	2,608,719	36.9	886,964
Huron	33,643	1,251,520	37.2	563,184	123,546	5,188,932	42.0	1,764,237
Kent	25,552	876,434	34.3	394,395	74,636	3,246,666	43.5	1,103,866
Lambton	25,348	775,649	30.6	349,042	88,946	3,468,894	39.0	1,179,424
Lanark	6,898	219,356	31.8	98,710	48,167	1,844,796	38.3	627,231
Leeds	6,540	204,702	31.3	92,116	51,645	1,874,714	36.3	637,403
Lennox & Add	13,919	379,989	27.3	170,995	47,723	1,646,444	34.5	559,791
Lincoln	2,925	92,723	31.7	41,725	23,149	972,258	42.0	330,568
Manitoulin	1,865	57,442	30.8	25,849	6,502	219,768	33.8	74,721
Middlesex	27,470	997,161	36.3	448,722	102,295	4,460,062	43.6	1,516,421
Muskoka	692	17,438	25.2	7,847	11,196	338,119	30.2	114,960
Nipissing	609	16,626	27.3	7,482	7,354	234,593	31.9	79,762
Norfolk	9,877	303,224	30.7	136,451	37,688	1,405,762	37.3	477,959
Northumberl'd	20,428	598,540	29.3	269,343	55,742	2,079,177	37.3	706,920
Ontario	31,537	1,015,491	32.2	456,971	85,638	3,082,968	36.0	1,048,209
Oxford	22,005	840,591	38.2	378,266	80,001	3,728,047	46.6	1,267,536
Parry Sound	1,273	33,735	26.5	15,181	15,058	519,501	34.5	176,630
Peel	29,185	931,002	31.9	418,951	50,175	2,117,385	42.2	719,911
Perth	29,754	1,133,627	38.1	510,132	104,417	4,677,882	44.8	1,590,480
Peterborough	9,898	316,736	32.0	142,531	51,562	2,036,699	39.5	692,478
Prescott	4,601	130,208	28.3	58,594	40,556	1,265,347	31.2	430,218
Prince Edward	16,265	461,926	28.4	207,867	24,556	832,448	33.9	283,032
Renfrew	4,371	118,891	27.2	53,501	57,155	2,051,865	35.9	697,634
Russell	3,958	119,532	30.2	53,789	29,358	986,429	33.6	335,386
Simcoe	61,426	2,076,199	33.8	934,290	116,419	4,761,537	40.9	1,618,923
Stormont	3,777	117,842	31.2	53,029	29,458	1,240,182	42.1	421,662
Victoria	17,026	556,750	32.7	250,537	71,122	2,702,636	38.0	918,896
Waterloo	20,909	763,179	36.5	343,431	60,532	2,808,685	46.4	954,953
Welland	2,232	64,728	29.0	29,128	29,533	1,107,488	37.5	376,546
Wellington	35,903	1,346,363	37.5	605,863	129,859	5,493,036	42.3	1,867,632
Wentworth	13,241	454,166	34.3	204,375	36,274	1,599,683	44.1	543,892
York	44,503	1,499,751	33.7	674,888	101,588	4,276,855	42.1	1,454,131
The Province:								
1906	756,163	25,253,011	33.4	11,363,855	2,716,711	108,341,455	39.9	36,836,095
1905	772,633	24,265,394	31.4	10,409,854	2,668,416	105,563,572	39.6	35,469,360
1904	772,434	24,567,825	31.8	10,736,140	2,654,936	102,173,443	38.5	33,002,022
1903	709,839	24,378,817	34.3	10,263,482	2,638,665	109,874,053	41.6	32,193,097
1902	661,622	21,890,602	33.1	9,872,661	2,500,758	106,431,439	42.6	37,038,141
1901	637,201	16,761,076	26.3	7,542,484	2,408,464	78,334,490	32.5	28,357,085
1900	577,810	16,909,751	29.3	6,577,893	2,398,834	89,693,327	37.4	23,768,732
1899	490,374	14,830,891	30.2	5,858,202	2,363,778	89,897,724	38.0	24,901,670
1898	438,784	12,663,668	28.9	4,812,194	2,376,360	86,858,293	36.6	22,409,440
1897	451,515	12,021,779	26.6	3,245,880	2,432,491	86,318,128	35.5	19,502,897
1882-1906	643,779	17,794,295	27.6	8,339,614	2,109,222	76,351,384	36.2	24,236,405

PEAS AND BEANS.

TABLE X. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Peas and Beans for the year 1906, together with the totals for the Province for the past ten years and the average for the twenty-five years, 1882-1906; also the average yield per acre.

Counties and Districts.	Peas.				Beans			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
Algoma	3,286	74,263	22.6	$ 52,430	15	225	15.0	$ 313
Brant	5,764	87,036	15.1	61,447	623	12,149	19.5	16,887
Bruce	28,927	630,609	21.8	445,210	98	1,960	20.0	2,724
Carleton	2,518	52,374	20.8	36,976	322	5,635	17.5	7,833
Dufferin	8,723	145,674	16.7	102,846	235	4,230	18.0	5,880
Dundas	348	7,064	20.3	4,987	144	2,333	16.2	3,243
Durham	17,308	261,351	15.1	184,514	484	8,664	17.9	12,043
Elgin	6,150	118,695	19.3	83,799	5,951	117,235	19.7	162,957
Essex	1,443	30,592	21 2	21,598	270	4,671	17.3	6,493
Frontenac	1,140	18,012	15.8	12,716	358	8,950	25.0	12,441
Glengarry	662	8,606	13.0	6,076	169	3,380	20.0	4,698
Grenville	427	9,181	21.5	6,482	106	2,120	20.0	2,947
Grey	30,997	641,638	20.7	452,996	148	2,960	20.0	4,114
Haldimand	14,163	192,617	13.6	135,988	425	7,650	18.0	10,634
Haliburton	1,164	19,672	16.9	13,888	13	260	20.0	361
Halton	8,349	132,749	15.9	93,721	38	684	18.0	951
Hastings	9,200	160,080	17.4	113,016	245	4,655	19.0	6,470
Huron	19,795	397,880	20.1	280,903	356	7,512	21.1	10,442
Kent	2,569	54,463	21.2	38,451	30,695	561,719	18.3	780,789
Lambton	3,780	74,088	19.6	52,306	940	15,134	16.1	21,036
Lanark	3,063	52,684	17.2	37,195	220	3,960	18.0	5,504
Leeds	971	19,614	20.2	13,847	220	3,520	16.0	4,893
Lennox & Add.	5,854	114,153	19.5	80,592	313	6,260	20.0	8,701
Lincoln	4,370	69,920	16.0	49,364	382	7,525	19.7	10,460
Manitoulin	2,935	59,287	20.2	41,857	13	260	20.0	361
Middlesex	8,269	171,168	20.7	120,845	800	16,560	20.7	23,018
Muskoka	1,942	31,655	16.3	22,348	22	396	18.0	550
Nipissing	1,476	34,243	23.2	24,176	8	144	18.0	200
Norfolk	10,871	154,368	14.2	108,984	2,252	43,689	19.4	60,728
Northumberl'd.	16,880	298,776	17.7	210,936	543	9,774	18.0	13,586
Ontario	14,926	247,772	16.6	174,927	229	4,580	20.0	6,366
Oxford	7,085	142,409	20.1	100,541	78	1,638	21.0	2,277
Parry Sound	3,071	66,027	21.5	46,615	22	396	18.0	550
Peel	10,657	144,935	13.6	102,324	71	1,420	20.0	1,974
Perth	11,714	241,308	20.6	170,363	10	170	17.0	236
Peterborough	14,724	287,118	19.5	202,705	78	1,326	17.0	1,843
Prescott	800	12,640	15.8	8,924	92	1,840	20.0	2,558
Prince Edward.	7,734	143,079	18.5	101,014	382	7,640	20.0	10,620
Renfrew	16,936	304,848	18.0	215,222	323	4,490	13.9	6,241
Russell	860	13,330	15.5	9,411	172	3,440	20.0	4,782
Simcoe	30,512	564,472	18.5	398,517	640	11,840	18.5	16,458
Stormont	269	5,568	20.7	3,931	205	4,920	24.0	6,839
Victoria	13,461	209,992	15.6	148,254	273	4,914	18.0	6,830
Waterloo	6,839	127,889	18.7	90,290	33	594	18.0	826
Welland	3,017	57,926	19.2	40,896	1,786	28,576	16.0	39,721
Wellington	18,157	295,959	16.3	208,947	91	1,593	17.5	2,214
Wentworth	8,047	126,338	15.7	89,195	101	1,717	17.0	2,387
York	18,203	274,865	15.1	194,055	278	5,004	18.0	6,955
The Province.								
1906	410,356	7,388,987	18.0	5,216,625	51,272	950,312	18.5	1,320,934
1905	374,518	7,100,021	19.0	4,636,314	50,543	846,443	16.7	1,117,305
1904	339,260	6,629,866	19.5	4,176,816	50,892	912,849	17.9	1,113,676
1903	407,133	8,924,650	21.9	5,738,550	53,039	978,246	18.4	1,379,327
1902	532,639	7,664,679	14.4	5,441,922	53,964	670,633	12.4	905,355
1901	602,724	10,089,173	16.7	6,588,230	53,688	824,122	15.4	1,030,153
1900	661,592	14,058,198	21.2	8,027,231	44,053	820,373	18.6	817,912
1899	743,139	15,140,790	20.4	8,675,673	40,485	651,009	16.1	703,090
1898	865,951	13,521,263	15.6	7,058,099	45,220	759,657	16.8	531,760
1897	896,735	13,867,093	15.5	5,838,046	50,591	981,340	19.4	639,834
1882-1906	658,069	12,768,753	19.4	7,483,202	41,530	712,335	17.2	778,851

RYE AND BUCKWHEAT.

TABLE XI.—Showing by County Municipalities of Ontario, the area, produce, and market value of the crops of Rye and Buckwheat for the year 1906, together with the totals for the Province for the past ten years, and the average for the twenty-five years 1882-1906, also the average per acre.

Counties and Districts.	Rye.				Buckwheat.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Bushels.	Per acre.	Market value.
Algoma	140	3,080	22.0	$ 1,876	99	1,485	15.0	$ 735
Brant	3,575	66,853	18.7	40,714	1,968	30,110	15.3	14,905
Bruce	653	11,362	17.4	6,919	1,294	23,033	17.8	11,401
Carleton	465	8,510	18.3	5,183	2,087	34,227	16 4	16,942
Dufferin	2,758	49,644	18.0	30,233	3,402	81,648	24.0	40,416
Dundas	130	2,184	16.8	1,330	1,153	20,408	17.7	10,102
Durham	3,514	52,359	14.9	31,887	4,729	75,664	16.0	37,454
Elgin	2,734	48,118	17.6	29,304	2,522	46,657	18.5	23,095
Essex	1,412	28,946	20.5	17,628	1,347	25,324	18.8	12,535
Frontenac	1,664	28,288	17.0	17,227	1,271	18,175	14.3	8,997
Glengarry	113	1,808	16.0	1,101	964	21,208	22.0	10,498
Grenville	435	7,917	18.2	4,821	2,898	46,948	16.2	23,239
Grey	293	4,893	16.7	2,980	3,335	75,038	22.5	37,144
Haldimand	1,659	25,217	15.2	15,357	779	13,399	17.2	6,633
Haliburton	5	80	16.0	49	400	8,000	20.0	3,960
Halton	355	5,325	15.0	3,243	296	5,032	17.0	2,491
Hastings	4,989	85,312	17.1	51,955	4,683	92,723	19.8	45,898
Huron	412	8,693	21.1	5,294	1,830	35,319	19.3	17,483
Kent	835	17,953	21.5	10,933	836	13,376	16.0	6,621
Lambton	534	10,680	20.0	6,504	453	9,060	20.0	4,485
Lanark	259	4,066	15.7	2,476	2,782	45,068	16.2	22,309
Leeds	456	7,615	16.7	4,638	2,627	39,930	15.2	19,765
Lennox & Addington	3,078	45,862	14.9	27,930	6,352	72,413	11.4	35,845
Lincoln	1,482	25,490	17.2	15,523	344	4,334	12.6	2,145
Manitoulin	66	1,188	18.0	723	30	750	25.0	371
Middlesex	715	13,442	18.8	8,186	703	15,325	21.8	7,586
Muskoka	133	1,968	14.8	1,199	158	2,259	14.3	1,118
Nipissing	17	340	20.0	207	40	800	20.0	396
Norfolk	9,952	158,237	15.9	96,366	8,692	137,334	15.8	67,980
Northumberland	7,159	104,521	14.6	63,653	7,988	105,442	13.2	52,194
Ontario	4,560	84,816	18.6	51,653	5,899	89,665	15.2	44,384
Oxford	1,473	26,219	17.8	15,967	1,473	32,406	22.0	16,041
Parry Sound	184	3,956	21.5	2,409	85	1,471	17.3	728
Peel	1,106	16,922	15.3	10,305	752	16,544	22.0	8,189
Perth	121	1,815	15.0	1,105	299	7,475	25.0	3,700
Peterborough	1,881	23,106	17.6	14,072	1,668	30,858	18.5	15,275
Prescott	41	615	15.0	374	1,152	19,008	16.5	9,409
Prince Edward	5,411	86,576	16.0	52,725	4,444	52,439	11.8	25,957
Renfrew	1,307	17,775	13.6	10,825	758	15,918	21.0	7,879
Russell	.....	.....	.....	.....	870	11,310	13.0	5,598
Simcoe	5,051	84,857	16.8	51,678	6,235	104,748	16.8	51,850
Stormont	9	198	22.0	121	1,502	33,044	22.0	16,357
Victoria	1,352	24,336	18.0	14,821	7,036	121,723	17.3	60,253
Waterloo	1,797	34,682	19.3	21,121	473	9,460	20.0	4,683
Welland	1,657	28,998	17.5	17,660	1,998	32,168	16.1	15,923
Wellington	208	3,827	18.4	2,331	2,124	50,976	24.0	25,233
Wentworth	1,645	26,978	16.4	16,430	1,518	27,779	18.3	13,751
York	2,075	31,955	15.4	19,461	2,096	35,422	16.9	17,534
The Province:								
1906	79,870	1,327,582	16.6	808,497	106,444	1,792,903	16.8	887,487
1905	101,292	1,711,951	16.9	974,092	101,591	2,199,652	21.7	1,099,826
1904	130,702	2,001,826	15.3	1,153,052	100,608	2,066,234	20.5	1,004,190
1903	179,277	2,970,768	16.6	1,443,793	95,487	2,049,169	21.5	907,782
1902	189,318	3,509,332	18.5	1,772,213	93,321	1,911,683	20.5	917,608
1091	158,236	2,545,268	16.1	1,254,817	88,266	1,757,071	19.9	850,422
1900	142,213	2,357,635	16.6	1,143,453	102,570	1,874,261	18.3	819,052
1899	137,824	2,284,846	16.6	1,142,423	132,082	2,203,299	16.7	1,002,501
1898	165,089	2,673,234	16.2	1,162,857	150,394	2,373,645	15.8	906,732
1897	187,785	3,382,005	18.0	1,275,016	151,669	3,464,186	22.8	1,039,256
1882-1906	120,348	1,969,777	16.4	1,025,243	99,992	1,946,501	19.5	806,940

CORN.*

TABLE XII.—Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Corn for husking and for fodder for the year 1906, together with the totals for the Province for the past ten years and the average for the fifteen years, 1892-1906, also the averages per acre.

Counties and Districts.	Corn for husking.				Corn for silo.			
	Acres.	Bushels.	Per acre.	Market value.	Acres.	Tons (green)	Per acre.	Market value.
Algoma	37	1,110	30.0	$ 417	46	230	5.00	$ 460
Brant	4,401	360,882	82.0	135,691	3,890	42,790	11.00	85,580
Bruce	627	25,080	40.0	9,430	3,688	45,584	12.36	91,168
Carleton	1,177	47,080	40.0	17,702	8,712	121,968	14.00	243,936
Dufferin	16	800	50.0	301	206	2,987	14.50	5,974
Dundas	2,367	175,158	74.0	65,859	4,959	70,517	14.22	141,034
Durham	1,583	106,061	67.0	39,879	2,907	33,721	11.60	67,442
Elgin	22,480	1,933,280	86.0	726,913	5,168	50,233	9.72	100,466
Essex	72,836	6,555,240	90.0	2,464,770	1,561	8,976	5.75	17,952
Frontenac	2,503	220,264	88.0	82,819	3,351	41,318	12.33	82,636
Glengarry	870	50,460	58.0	18,973	4,252	60,378	14.20	120,756
Grenville	2,903	211,919	73.0	79,681	3,981	51,076	12.83	102,152
Grey	322	16,100	50.0	6,054	3,650	48,947	13.41	97,894
Haldimand	2,564	192,300	75.0	72,305	2,174	21,740	10.00	43,480
Haliburton	97	3,880	40.0	1,459	66	924	14.00	1,848
Halton	561	29,733	53.0	11,180	3,255	36,521	11.22	73,042
Hastings	5,503	363,198	66.0	136,562	7,573	80,567	10.64	161,134
Huron	1,004	51,204	51.0	19,253	7,809	111,200	14.24	222,400
Kent	63,782	5,740,380	90.0	2,158,383	2,599	20,870	8.03	41,740
Lambton	18,308	1,446,332	79.0	543,821	7,366	75,207	10.21	150,414
Lanark	1,302	82,026	63 0	30,842	5,260	68,380	13.00	136,760
Leeds	5,124	420,168	82.0	157,983	3,611	44,993	12.46	89,986
Lennox & Addington	3,142	238,792	76.0	89.786	1,445	16,618	11.50	33,236
Lincoln	7,191	510,561	71.0	191,971	1,631	15,005	9.20	30,010
Manitoulin	15	600	40.0	226	111	1,277	11.50	2,554
Middlesex	15,449	1,297,716	84.0	487,941	11,723	113,479	9.68	226,958
Muskoka	157	9,420	60.0	3,542	168	1,092	6.50	2,184
Nipissing	73	2,920	40.0	1,098	37	259	7.00	518
Norfolk	14,862	1,084,926	73.0	407,932	4,456	39,391	8.84	78,782
Northumberland	3,838	234,118	61.0	88,028	4,686	50,375	10.75	100,750
Ontario	2,166	147,288	68.0	55,380	5,417	63,433	11.71	126,866
Oxford	8,347	667,760	80.0	251,078	11,348	125,963	11.10	251,926
Parry Sound	140	7,000	50.0	2,632	56	700	12.50	1,400
Peel	415	33,200	80.0	12,483	3,066	42,924	14.00	85,848
Perth	242	14,520	60.0	5,460	7,872	98,951	12.57	197,902
Peterborough	386	25,090	65.0	9,434	1,945	20,753	10.67	41,506
Prescott	2,742	216,618	79.0	81,448	2,372	33,208	14.00	66,416
Prince Edward	6,155	437,005	71.0	164,314	3,197	32,673	10.22	65,346
Renfrew	457	22,850	50.0	8,592	1,970	18,380	9.33	36,760
Russell	934	80,324	86.0	30,202	2,180	29,430	13.50	58,860
Simcoe	1,166	65,296	56.0	24,551	3,431	44,980	13.11	89,960
Stormont	1,122	98,736	88.0	37,125	3,912	55,902	14.29	111,804
Victoria	264	13,200	50.0	4,963	2,156	30,723	14.50	61,446
Waterloo	543	34,209	63.0	12,863	4,247	58,736	13.83	117,472
Welland	6,936	534,072	77.0	200,811	1,233	12,515	10.15	25,030
Wellington	152	12,160	80.0	4,572	2,552	34,809	13.64	69,618
Wentworth	1,799	140,322	78.0	52,761	5,010	48,647	9.71	97,294
York	396	27,324	69.0	10,274	8,491	120,063	14.14	240,126
The Province:								
1906	289,456	23,988,682	82.9	9,019,744	180,796	2,149,413	11.89	4,298,826
1905	295,005	20,922,919	70.9	7,720,557	184,784	2,284,812	12.36	4,569,624
1904	329,882	20,241,914	61.4	7,570,476	193,115	2,023,340	10.48	4,046,680
1903	378,924	29,287,888	77.3	10,807,230	209,727	2,564,400	12.23	5,128,800
1092	371,959	20,512,194	55.1	8,327,951	209,859	2,611,334	12.44	5,222,668
1901	323,923	24,838,105	76.7	9,438,480	197,932	2,359,514	11.92	4,719,028
1900	330,772	27,093,561	81.9	8,588,659	179,798	2,147,532	11.94	4,295,064
1899	333,590	21,673,234	65.0	4,291,300	171,935	1,697,755	9.87	3,395,510
1898	330,748	23,442,593	70.9	4,711,961	189,948	2,128,073	11.20	4,256,146
1897	333,030	24,663,998	73.6	4,858,808	209,005	2,669,822	12.77	5,339,644
1892-1906, 15 yrs.	307,066	21,808,944	71.0	6,255,233	170,293	1,960,575	11.51	3,921,150

* The combined average area for corn for the twenty-five years 1882-1906, is 364,766 acres, the average value of the produce for the same period being $7,698,256.

POTATOES AND CARROTS.

TABLE XIII. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Potatoes and Carrots for the year 1906, together with the totals for the Province for the past ten years, and the average for the twenty-five years, 1882-1906; also the averages per acre.

Counties and Districts.	Potatoes.				Carrots.			
	Acres.	Bushels.	Per acre	Market value.	Acres.	Bushels.	Per acre	Market value.
Algoma	1,744	254,624	146	$ 136,987	124	40,052	372	$ 5,006
Brant	2,364	290,772	123	156,435	43	16,985	560	2,123
Bruce	3,344	448,096	134	241,076	246	67,404	449	8,426
Carleton	3,662	465,074	127	250,210	198	70,092	417	8,761
Dufferin	2,227	207,111	93	111,426	52	14,196	482	1,774
Dundas	1,974	238,854	121	128,504	62	13,764	327	1,720
Durham	2,498	299,760	120	161,271	77	33,341	492	4,168
Elgin	2,733	333,426	122	179,383	83	29,714	477	3,714
Essex	3,097	300,409	97	161,620	103	30,900	392	3,863
Frontenac	3,760	406,080	108	218,471	195	54,210	394	6,776
Glengarry	2,032	219,456	108	118,067	67	23,182	406	2,898
Grenville	2,682	329,886	123	177,479	131	34,977	407	4,372
Grey	5,105	704,490	138	379,016	137	48,224	447	6,028
Haldimand	1,288	113,344	88	60,979	32	9,056	395	1,132
Haliburton	598	60,996	102	32,816	19	4,978	360	622
Halton	1,428	145,656	102	78,363	47	12,455	448	1,557
Hastings	4,657	512,270	110	275,601	192	61,248	382	7,656
Huron	3,446	441,088	128	237,305	147	49,980	498	6,247
Kent	3,149	349,539	111	188,052	64	21,824	421	2,728
Lambton	3,038	297,724	98	160,176	132	37,356	461	4,670
Lanark	2,201	319,145	145	171,700	94	31,584	390	3,948
Leeds	2,901	371,328	128	199,775	155	42,005	385	5,251
Lennox and Addington	3,240	349,920	108	188,257	77	14,322	287	1,790
Lincoln	1,997	171,742	86	92,397	131	40,479	412	5,060
Manitoulin	513	66,177	129	35,603	39	12,675	406	1,584
Middlesex	5,174	600,184	116	322,899	200	79,800	475	9,975
Muskoka	1,089	143,748	132	77,336	81	27,621	250	3,453
Nipissing	1,078	121,814	113	65,536	41	10,742	287	1,343
Norfolk	2,800	280,000	100	150,640	122	37,332	398	4,666
Northumberland	4,153	415,300	100	223,432	133	46,151	392	5,769
Ontario	3,475	337,075	97	181,346	51	13,005	462	1,626
Oxford	2,676	329,148	123	177,082	59	25,193	560	3,149
Parry Sound	1,248	194,688	156	104,742	83	28,967	483	3,621
Peel	2,909	258,901	89	139,289	62	27,714	483	3,464
Perth	2,984	393,888	132	211,912	88	34,672	506	4,334
Peterborough	2,664	301,032	113	161,955	126	37,170	404	4,646
Prescott	2,762	317,630	115	170,885	117	38,579	356	4,197
Prince Edward	1,964	163,012	83	87,700	70	17,780	392	2,223
Renfrew	3,461	467,235	135	251,372	145	43,500	387	5,437
Russell	1,227	184,050	150	99,019	140	31,500	250	3,938
Simcoe	7,146	771,768	108	415,211	228	80,256	480	10,032
Stormont	1,825	235,425	129	126,659	84	21,924	366	2,741
Victoria	2,457	196,560	80	105,749	48	16,800	478	2,100
Waterloo	2,837	295,048	104	158,736	100	37,100	484	4,638
Welland	2,852	245,272	86	131,956	52	16,536	407	2,067
Wellington	4,107	369,630	90	198,861	103	36,153	534	4,519
Wentworth	3,359	309,028	92	166,257	50	20,800	538	2,600
York	6,139	392,896	64	211,378	156	59,400	396	7,425
The Province:								
1906	136,064	15,020,299	110	8,080,921	4,980	1,598,698	321	199,837
1905	132,530	14,366,049	108	6,608,383	5,509	1,846,659	335	230,832
1904	133,819	15,479,122	116	7,847,915	6,634	2,022,945	305	252,868
1903	139,011	16,676,447	120	7,354,313	7,805	2,612,778	335	326,597
1902	144,733	12,942,502	89	7,312,514	8,625	3,227,161	374	403,395
1901	154,155	18,116,637	118	7,717,687	9,221	3,199,967	347	399,996
1900	163,754	21,476,439	131	5,605,351	10,320	3,469,123	336	433,640
1899	168,148	19,933,366	119	6,538,144	11,891	3,674,035	309	459,254
1898	169,946	14,358,625	84	6,332,154	12,418	4,313,861	347	539,233
1897	169,333	16,100,797	95	6,424,218	12,025	4,433,628	369	554,204
1882-1906	155,406	17,837,505	115	7,338,880	9,976	3,468,284	348	433,535

MANGEL-WURZELS AND TURNIPS.

TABLE XIV. Showing by County Municipalities of Ontario, the area, produce and market value of the crops of Mangel-Wurzels and Turnips for the year 1906, together with the totals for the Province for the past ten years and the average for the twenty-five years, 1882-1906; also the averages per acre.

Counties and Districts.	Mangel-Wurzels.				Turnips.			
	Acres.	Bushels.	Per acre	Market value.	Acres.	Bushels.	Per acre	Market value.
Algoma	70	26,040	323	$ 2,083	1,037	399,245	385	$ 39,925
Brant	1,717	961,520	395	76,922	2,852	1,386,072	486	138,607
Bruce	3 616	1,623,584	274	129,887	7,518	3,104,934	413	310,493
Carleton	1,327	553,359	354	44,269	2,419	1,071,617	443	107,162
Dufferin	566	272,812	273	21,825	4,388	1,878,064	428	187,806
Dundas	153	50,031	222	4,002	93	36,642	394	3,664
Durham	2,099	1,032,708	433	82,617	6,010	2,458,090	409	245,809
Elgin	970	462,690	358	37,015	238	84,490	355	8,449
Essex	703	275,576	300	22,046	71	21,300	300	2,130
Frontenac	542	213,548	278	17,084	455	162,890	358	16,289
Glengarry	223	90,538	346	7,243	269	119,974	446	11,997
Grenville	219	89,133	267	7,131	233	99,491	427	9,949
Grey	3,850	1,720,950	352	137,676	11,092	5,346,344	482	534,634
Haldimand	492	194,340	283	15,547	98	25,872	264	2,587
Haliburton	22	7,920	262	634	213	82,431	387	8,243
Halton	1,690	757,120	265	60,570	1,192	483,952	406	48,395
Hastings	829	316,678	319	25,334	1,811	702,668	388	70,267
Huron	5,397	2,687,706	340	215,016	8,234	3,482,982	423	348,298
Kent	931	391,951	341	31,356	123	33,825	275	3,382
Lambton	1,601	738,061	283	59,045	239	84,367	353	8,437
Lanark	607	236,730	336	18,938	1,087	453,279	417	45,328
Leeds	431	165,935	271	13,275	559	206,271	369	20,627
Lennox and Addington	269	77,203	186	6,176	206	57,062	277	5,706
Lincoln	524	215,888	309	17,271	202	69,286	343	6,929
Manitoulin	45	18,270	325	1,462	365	159,140	436	15,914
Middlesex	2,942	1,397,450	399	111,796	2,189	917,191	419	91,719
Muskoka	50	12,500	341	1,000	558	211,482	379	21,148
Nipissing	17	4,879	262	390	267	79,566	298	7,957
Norfolk	845	336,310	306	26,905	1,166	381,282	327	38,128
Northumberland	1,375	539,000	347	43,120	4,818	1,373,130	285	137,313
Ontario	3,698	1,708,476	255	136,678	11,578	4,828,026	417	482,803
Oxford	3,520	1,971,200	427	157,696	5,780	2,762,840	478	276,284
Parry Sound	57	27,531	349	2,202	1,032	420,024	407	42,002
Peel	1,270	613,410	447	49,072	1,894	850,406	449	85,041
Perth	4,729	2,392,874	394	191,430	5,242	2,552,854	487	255,286
Peterborough	1,393	562,772	295	45,022	2,254	1,003,030	445	100,303
Prescott	195	69,420	287	5,554	243	78,975	325	7,898
Prince Edward	323	126,616	254	10,129	142	40,328	284	4,033
Renfrew	517	200,079	300	16,006	821	256,973	313	25,697
Russell	327	81,750	225	6,540	577	144,250	250	14,425
Simcoe	2,913	1,398,240	352	111,859	9,447	4,411,749	467	441,175
Stormont	120	43,920	261	3,514	139	39,893	287	3,989
Victoria	1,739	831,242	350	66,499	5,141	2,380,283	463	238,028
Waterloo	2,303	1,114,652	371	89,172	4,866	2,072,916	426	207,292
Welland	314	127,798	318	10,224	185	66,415	359	6,642
Wellington	4,493	2,399,262	351	191,941	13,583	6,058,018	446	605,802
Wentworth	2,097	1,128,186	416	90,255	1,936	846,032	437	84,603
York	5,222	2,595,334	497	207,627	7,650	3,274,200	428	327,420
The Province:								
1906	69,352	32,863,192	474	2,629,055	132,512	57,060,151	431	5,706,015
1905	69,035	33,216,930	481	2,657,354	135,348	57,654,086	426	5,765,409
1904	71,344	33,595,440	471	2,687,635	133,207	64,861,703	487	6,486,170
1903	80,918	41,768,239	516	3,341,459	134,469	69,316,341	515	6,931,634
1902	76,553	39,140,924	511	3,131,274	136,725	71,740,204	525	7,174,020
1901	61,095	29,683,324	486	2,374,666	145,909	68,287,467	468	5,828,747
1900	54,543	24,728,525	453	1,978,282	156,583	59,330,395	379	5,933,040
1899	53,401	20,898,387	391	1,671,871	153,440	58,078,390	379	5,807,839
1898	47,923	21,957,564	458	1,756,605	151,601	64,727,882	427	6,472,788
1897	41,175	18,103,387	440	1,448,271	149,336	68,297,148	457	8,829,715
1882-1906	38,500	17,784,518	462	1,422,761	127,699	55,387,584	434	5,538,758

HAY AND CLOVER—ALL FIELD CROPS.

TABLE XV. Showing by County Municipalities of Ontario, the area, produce and market value of the crop of Hay and Clover for the year 1906, together with the totals for the Province for the past ten years and the average for the twenty-five years, 1882-1906; also the average per acre. It also shows the aggregate area and the market value of all the field crops enumerated in Tables VIII-XV.

Counties and Districts.	Hay and Clover.				All field crops.		
	Acres.	Tons.	Per acre.	Market value.	Acres.	Market value.	Per acre.
Algoma	34,933	54,845	1.57	$ 199,090	62,281	$1,013,107	$16 27
Brant	33,733	60,045	1.78	546,410	425,964	2,319,280	18 41
Bruce	120,365	136,012	1.13	1,237,709	330,307	4,685,560	14 19
Carleton	82,077	100,955	1.23	918,690	202,264	3,061,849	15 14
Dufferin	48,521	81,030	1.67	737,373	170,790	2,698,421	15 80
Dundas	48,822	77,139	1.58	701,965	102,452	1,671,203	16 31
Durham	50,033	97,064	1.94	883,282	198,048	3,171,873	16 02
Elgin	67,348	89,573	1.33	815,114	207,016	3,539,317	17 10
Essex	50,372	87,144	1.73	793,010	237,210	5,045,096	21 27
Frontenac	85,198	162,728	1.91	1,480,825	162,161	2,701,357	16 66
Glengarry	59,682	74,006	1.24	673,455	119,074	1,564,473	13 14
Grenville	48,585	74,821	1.54	680,871	100,784	1,591,919	15 80
Grey	150,511	177,603	1.18	1,616,187	420,609	6,271,834	14 91
Haldimand	67,114	86,577	1.29	787,851	165,814	2,205,113	13 30
Haliburton	14,258	16,112	1.13	146,619	24,740	301,535	12 19
Halton	34,743	58,368	1.68	531,149	114,225	1,816,502	15 90
Hastings	110,719	176,043	1.59	1,601,991	260,770	3,929,335	15 07
Huron	122,750	174,305	1.42	1,586,176	365,464	5,913,721	16 26
Kent	74,099	122,263	1.65	1,112,593	340,186	6,861,378	20 17
Lambton	97,630	139,611	1.43	1,270,460	284,569	4,363,920	15 34
Lanark	70,168	105,954	1.51	964,181	151,402	2,281,873	15 07
Leeds	78,762	159,099	2.02	1,447,801	157,295	2,752,533	17 50
Lennox and Add'ton	86,515	150,536	1.74	1,369,878	177,184	2,642,858	14 92
Lincoln	42,347	67,755	1.60	616,571	103,580	1,669,529	16 12
Manitoulin	19,396	17,262	.89	157,084	33,034	374,635	11 34
Middlesex	112,839	178,286	1.58	1,622,403	339,123	5,879,104	17 34
Muskoka	26,772	36,945	1.38	336,200	43,704	600,884	13 75
Nipissing	15,591	19,801	1.27	180,189	27,120	375,754	13 86
Norfolk	48,130	69,789	1.45	635,080	187,759	2,901,375	15 45
Northumberland	62,417	107,981	1.73	982,627	215,045	3,275,723	15 23
Ontario	63,007	124,754	1.98	1,135,261	259,303	4,340,969	16 74
Oxford	72,160	127,723	1.77	1,162,279	247,390	4,631,606	18 72
Parry Sound	28,944	38,785	1.34	352,943	51,857	760,158	14 66
Peel	48,493	87,772	1.81	798,725	174,950	2,808,452	16 05
Perth	86,401	140,834	1.63	1,281,589	290,601	5,062,522	17 42
Peterborough	49,782	70,193	1.41	638,756	156,034	2,351,126	15 07
Prescott	59,243	63,390	1.07	576,849	118,989	1,467,663	12 33
Prince Edward	43,865	81,589	1.86	742,460	117,981	1,804,895	15 30
Renfrew	84,510	80,285	.95	730,594	203,552	2,471,616	12 14
Russell	39,254	42,394	1.08	385,785	81,804	1,032,849	12 63
Simcoe	103,462	171,747	1.66	1,562,898	430,516	7,112,331	16 52
Stormont	40,979	63,927	1.56	581,736	84,643	1,385,788	16 37
Victoria	48,117	75,063	1.56	683,073	189,623	2,842,992	14 99
Waterloo	48,960	90,576	1.85	824,242	186,955	3,394,807	18 16
Welland	55,592	73,937	1.33	672,827	127,441	1,884,087	14 78
Wellington	102,238	159,491	1.56	1,451,368	330,907	5,526,141	16 70
Wentworth	47,316	79,491	1.68	723,368	151,874	2,585,918	17 03
York	83,164	153,022	1.84	1,392,500	328,531	5,595,094	17 03
The Province :							
1906	3,069,917	4,684,625	1.53	12,630,087	8,962,925	144,570,075	16 13
1905	3,020,365	5,847,494	1.94	45,142,654	8,897,898	142,804,431	16 05
1904	2,926,207	5,259,189	1.80	41,915,736	8,673,525	134,304,690	15 48
1903	2,783,565	4,336,562	1.56	34,132,302	8,731,405	136,657,807	15 65
1902	2,646,202	4,955,438	1.87	40,386,820	8,677,988	146,421,171	16 87
1901	2,557,263	4,632,317	1 81	37,012,213	8,667,512	128,325,648	14 81
1906	2,526,566	3,133,045	1.24	26,568,222	8,794,953	114,758,761	13 05
1899	2,505,422	3,498,705	1.40	27,010,003	8,753,926	105,771,321	12 08
1898	2,453,503	4,399,063	1.79	27,362,172	8,835,272	110,528,947	12 51
1897	2,341,488	3,811,518	1.63	27,366,699	8,701,705	106,952,471	12 29
1882-1906	2,502,362	3,704,761	1.48	32,649,207	8,162,710	117,124,515	14 35

RATIOS OF AREAS UNDER CROP.

TABLE XVI.—Showing by County Municipalities of Ontario the number of acres under the various crops in 1906 per 1,000 acres of cleared land; together with the average for the Province for the past ten years, and the average of the twenty-five years, 1882-1906.

Counties and Districts.	Fall wheat.	Spring wheat.	Barley.	Oats.	Peas.	Beans.	Rye.	Buckwheat.	Corn.	Potatoes.	Carrots.	Mangel-Wurzels.	Turnips.	Hay and Clover.	Total.
Algoma	4.4	8.8	27.4	215.2	40.5	.2	1.7	1.2	1.0	21.5	1.5	.9	12.8	430.7	767.8
Brant	127.0	1.2	72.0	165.6	32.4	3.5	20.1	11.1	46.6	13.3	.2	9.7	16.0	189.7	708.4
Bruce	59.4	2.6	43.3	186.4	52.8	.2	1.2	2.3	7.9	6.1	.4	6.6	13.7	219.5	602.4
Carleton	1.8	17.9	27.0	236.2	7.3	.9	1.3	6.1	28.8	10.7	.6	3.9	7.1	238.9	588.5
Dufferin	15 2	18.7	72.5	285.0	34.3	.9	10.8	13.4	.9	8.7	.2	2.2	17.2	190.5	670.5
Dundas	2.0	3.4	25.1	224.1	2.1	.9	.8	6.9	44.1	11.9	.4	.9	.6	294.1	617.3
Durham	25.9	36.6	100.1	195.6	58.0	1.6	11.8	15.9	15.0	8.4	.3	7.0	20.1	167.8	664.1
Elgin	79.4	.3	46.7	138.1	17.9	17.4	8.0	7.4	80.7	8.0	.2	2.8	.7	196.6	604.2
Essex	56.4	2.3	35.6	230.1	4.5	.8	4.4	4.2	232.1	9.7	.3	2.2	.2	157.1	739.9
Frontenac	1.6	14.3	27.6	160.3	3.8	1.2	5.5	4.2	19.3	12.4	.6	1.8	1.5	281.2	535.3
Glengarry	.3	17.9	35.5	196.5	3.3	.9	.6	4.8	25.7	10.2	.3	1.1	1.4	299.9	598.4
Grenville	.9	6.6	17.7	187.5	2.4	.6	2.4	16.1	38.4	14.9	.7	1.2	1.3	270.7	561.4
Grey	38.7	7.5	50.9	210.2	45.1	.2	.4	4.9	5.8	7.4	.2	5.6	16.2	219.0	612.1
Haldimand	129.0	1.7	35.1	152.0	60.0	1.8	7.0	3.3	20.0	5.4	.1	2.1	.4	284.2	702.1
Haliburton	.7	15.6	14.9	164.1	28.8	.3	.1	9.9	4.0	14.8	.5	.6	5.3	353.1	612.7
Halton	139.5	4.6	64.4	152.3	48.4	.2	2.0	1.7	22.1	8.3	.3	9.8	6.9	201.3	661.8
Hastings	19.2	9.8	62.1	162.4	21.1	.5	11.4	10.7	30.3	10.7	.4	1.9	4.1	254.3	598.9
Huron	55.0	2.5	52.1	191.3	30.7	.6	.6	2.8	13.6	5.3	.2	8.4	12.8	190.1	566.0
Kent	128.8	3.1	55.9	163.2	5.6	67.1	1.8	1.8	145.2	6.9	.2	2.0	.3	162.1	744.0
Lambton	75.6	1.4	53.8	188.8	8.0	2.0	1.2	1.0	54.5	6.4	.3	3.4	.5	207.2	604.1
Lanark	6.2	23.0	21.7	151.2	9.6	.7	.8	8.7	20.6	6.9	.3	1.9	3.4	220.2	475.2
Leeds	4.2	8.2	24.6	194.5	3.7	.8	1.7	9.9	32.9	10.9	.6	1.6	2.1	296.6	592.3
Lennox and Addington	5.7	12.8	50.9	174.5	21.4	1.1	11.3	23.2	16.8	11.8	.3	1.0	.8	316.4	648.0
Lincoln	102.5	1.0	17.9	141.9	26.8	2.3	9.1	2.2	54.1	12.2	.8	3.2	1.2	259.5	634.7
Manitoulin	13.1	13.6	43.8	152.7	68.9	.3	1.5	.7	3.0	12.0	.9	1.1	8.6	455.4	775.6
Middlesex	73.6	.4	42.0	156.5	12.7	1.2	1.1	1.1	41.6	7 9	.3	4.5	3.4	172.6	518.9
Muskoka	1.1	9.6	10.8	174.9	30.4	.3	2.1	2.5	5.1	17.0	1.3	.8	8.7	418.3	682.9
Nipissing	.8	10.5	13.5	163.0	32.7	.2	.4	.9	2.4	23.9	.9	.4	5.9	345.6	601.1

Norfolk	133.0	.7	36.6	139.8	40.3	8.4	36.9	32.2	71.6	10.4	.5	3.1	4.3	178.5	696.3
Northumberland	49.7	23.2	59.8	163.2	49.4	1 6	21.0	23.4	24.9	12.2	.4	4.0	14.1	182.7	629.6
Ontario	32.9	40.9	85.9	233.1	40.6	.6	12.4	16.1	20.6	9.5	.1	10.1	31.5	171.5	705.8
Oxford	79.4	.5	56.1	203.8	18.0	.2	3.8	3.8	50.2	6 8	.1	9.0	14.7	183.9	630.3
Parry Sound	.2	8.0	17.3	204.6	41.7	.3	2.5	1.2	2.7	17.0	1.1	.8	14.0	393.3	704.7
Peel	91.3	4.4	112.2	193 0	41.0	.3	4.2	2.9	13.4	11.2	.2	4.9	7.3	186.5	672.8
Perth	80.5	1.8	66.6	233.9	26.2	.0	.3	.7	18.2	6.7	.2	10.6	11.7	193.6	651.0
Peterborough	47.3	21.4	38.5	200.5	57.2	.3	7.3	6.5	9.1	10.3	.5	5.4	8.8	193.5	606.6
Prescott	.....	20 7	23.4	206.0	4.1	.5	.2	5.8	26.0	14.0	6	1.0	1.2	300.9	604.4
Prince Edward	12.5	5.5	84.3	127.3	40.1	2.0	28.1	23.0	48.5	10.2	.4	1.7	.7	227.4	611.7
Renfrew	1.7	85.5	12.4	161.7	47.9	.9	3.7	2.1	6.9	9.8	.4	1.5	2.3	239.1	575.9
Russell	2.2	13.9	32.7	242.7	7.1	1.4	.....	7.2	25.7	10.1	1.2	2.7	4.8	324 4	676.1
Simcoe	115.2	15.1	97.1	183.9	48.2	1.0	8.0	9.8	7.3	11.3	.4	4.6	14.9	163 5	680.3
Stormont	.5	7.7	24.8	193.8	1.8	1.3	.1	9.9	33.1	12.0	.5	.8	.9	269.6	556.8
Victoria	34.7	34.1	60.2	251.7	47.6	1.0	4.8	24.9	8.5	8.7	.2	6.1	18.2	170.3	671.0
Waterloo	128.9	.5	83.2	240.9	27.2	.1	7.1	1.9	19.0	11.3	.4	9.2	19.4	194.8	743.9
Welland	106.9	1.3	12.0	159.4	16.3	9.6	8.9	10.8	44.1	15.4	.3	1.7	1.0	300.1	687.8
Wellington	24.4	10.6	72.6	262.5	36.7	.2	.4	4.3	5.5	8.3	.2	9.1	27.4	206.7	668.9
Wentworth	138.9	1.2	63.0	172.5	38.3	.5	7.8	7.2	32.4	16.0	.2	10.0	9.2	225.0	722.2
York	82.1	28.5	101.3	231.3	41.5	6	4.7	4.8	20.2	14.0	.3	11.9	17 4	189.4	748.0
The Province:															
1906	55.8	12.2	53.6	192.6	29.1	3.6	5.7	7.5	33.3	9.7	.4	4.9	9.4	217.6	635.4
1905	57.2	13.6	55.5	191.5	26.9	3.6	7.3	7.3	34.1	9.5	.4	5.0	9.7	216.8	638.7
1904	43.8	16.3	55.9	192.2	24.6	3.7	9.5	7.3	37.9	9.7	.5	5.2	9.6	211.9	628.1
1903	48.8	18.2	52.0	193.4	29.9	3.9	13.1	7.0	43.2	10.2	.6	5.9	9.9	204.0	640.1
1902	55.2	22.3	48.8	184.3	39.2	4.0	13.9	6.9	42.9	10.7	.6	5.6	10.1	195.0	639.5
1901	67.8	26.6	47.4	179.3	44.9	4.0	11.8	6.6	38.8	11.5	.7	4.5	10.9	190.3	645.1
1900	80.4	28.3	43.4	180.4	49.8	3.3	10.7	7.7	38.4	12.3	.8	4.1	11.8	190.0	661.4
1899	80.1	30.4	37.4	180.3	56.7	3.1	10.5	10.1	38.6	12.8	.9	4.0	11.7	191.1	667.7
1898	80.7	30.0	33.8	182.9	66.6	3.4	12.7	11.5	40.1	13.1	1.0	3.7	11.7	188.8	680.0
1897	73.9	25.2	35.1	189.3	69.8	3.9	14.6	11.8	42.3	13.2	.9	3.2	11.6	182.2	677.0
1882-1906	71.5	33.7	52.4	171.8	53.6	3.4	9.8	8 2	29 7	12.7	.8	3.1	10.4	203.9	665.0

PASTURE—ORCHARD—VINEYARD—APPLES.

TABLE XVII. Showing by County Municipalities of Ontario the area in pasture (cleared land), orchard and garden, and vineyard, for the year 1906, together with the totals for the Province for the past ten years; also the number of apple trees and the yield.

Counties and Districts.	Pasture.	Orch'd & Garden.	Vine-yards.	Apple Trees 15 Years old and over.			No. of trees under 15 years in Orchards.
				No. of Trees.	Bushels.	Bush. per tree.	
Algoma	14,530	921	5	5,537	17,885	3.23	21,945
Brant	29,904	6,041	60	109,829	761,115	6.93	31,856
Bruce	158,660	10,167	72	244,904	1,302,889	5.32	70,233
Carleton	99,109	2,742	38	52,181	278,125	5.33	71,869
Dufferin	49,501	3,060	23	55,798	320,281	5.74	32,860
Dundas	48,016	2,772	66	71,306	287,363	4.03	30,536
Durham	52,989	8,791	84	201,504	731,460	3.63	182,725
Elgin	95,324	10,494	53	205,864	1,091,079	5.30	61,931
Essex	39,931	12,503	1,555	168,330	887,099	5.27	67,071
Frontenac	83,977	4,733	51	101,334	575,577	5 68	44,210
Glengarry	55,208	2,049	41	49,185	221,824	4.51	17,119
Grenville	60,852	3,059	44	69,047	140,856	2.04	47,807
Grey	171,356	15,344	62	315,529	1,719,633	5.45	197,669
Haldimand	40,375	6,851	71	137,820	815,894	5.92	29,407
Haliburton	9,632	497	13	6,648	34,570	5.20	9,761
Halton	31,260	8,292	322	156,388	724,076	4.63	37,874
Hastings	115,753	10,737	92	210,622	1,156,315	5.49	166,193
Huron	206,508	13,681	52	324,881	1,725,118	5.31	90,854
Kent	78,463	15,728	214	315,221	1,654,910	5.25	91,265
Lambton	123,236	11.872	159	268,025	1,214,153	4.53	69,379
Lanark	112,373	2,613	14	62,477	221,169	3.54	33,319
Leeds	97,227	3,686	66	79,274	319,474	4.03	40,085
Lennox & Addington	82,443	7,057	.....	108,530	454,741	4 19	104,815
Lincoln	24,301	16,081	4,554	190,945	1,094,115	5.73	17,840
Manitoulin	7,599	526	.....	4,534	19,315	4.26	13,592
Middlesex	235,442	16,516	150	385,503	2,135,687	5.54	88,129
Muskoka	14,382	963	7	6,085	25,557	4.20	19,142
Nipissing	7,614	248	4	432	864	2.00	3,041
Norfolk	43,025	10,216	240	178,984	1,297,634	7.25	31,500
Northumberland	74,942	19,086	91	450,136	1,584.479	3.52	379,113
Ontario	57,175	9,933	30	220,665	684,062	3.10	130,539
Oxford	98,705	10,478	60	184,777	1,395,066	7.55	52,926
Parry Sound	13,548	524	31	2,186	11,039	5.05	8,336
Peel	56,191	6,824	141	136,343	616,270	4.52	39,118
Perth	109,110	7,754	63	159,274	954,051	5.99	38,921
Peterborough	67,124	3,627	24	70,328	410,716	5.84	36,982
Prescott	50,612	2,111	35	37,656	208,991	5.55	48,321
Prince Edward	44,427	12,610	7	230,946	1,032,329	4.47	208,588
Renfrew	93,860	2,035	31	26,712	102,841	3.85	35,820
Russell	29,228	1,116	30	14,727	55,226	3.75	17,655
Simcoe	107,874	12,716	130	220,354	1,172,283	5.32	158,960
Stormont	50,367	2,428	.....	59,128	235,921	3.99	26,653
Victoria	56,486	3,872	45	79,441	376,550	4.74	40,111
Waterloo	33,495	5,704	21	113,237	621,671	5.49	28,472
Welland	36,985	9,450	1,687	199,329	1,209.927	6.07	14,513
Wellington	94,408	7,238	90	156,028	811,346	5.20	42,187
Wentworth	31,293	14,583	2,133	208,150	1,128,173	5.42	37,226
York	54,281	11,977	24	242,676	1,167,272	4.81	122,368
The Province:							
1906	3,349,101	352,306	12,785	6,898,810	35,006,991	5.07	3,190,836
1905	3,291,235	366,613	13,719	7,018,723	31,380,749	4.47	3,183,043
1904	3,183,973	369,495	14,357	7,103,566	49,687,423	6.99	3,329,379
1903	3,057,576	365,851	15,269	7,095,554	43,659,413	6.15	3,456,053
1902	2,879,972	356,251	14,028	7,024,890	47,648,743	6.78	3,446,904
1901	2,777,983	346,915	12,227	6,777,935	14,430,650	2.13	3,392,701
1900	2,694,600	339,411	10,687	6,518,048	36,993,017	5.68	3,430,670
1899	2,710,268	338,073	10,802	6,324,842	19,126,439	3.02	3,445,135
1898	2,708,043	335,420	10,118	6,221,324	*	.....	3,458,820
1897	2,658,245	326,341	11,100	6,102,399	13,343,720	2.19	3,435,018

* No estimate made.

HORSES.

TABLE XVIII. Showing by County Municipalities of Ontario the number and value of horses on hand on July 1, 1906, together with the totals for the Province for the past ten years; also the number and value of horses sold during the year ending June 30.

Counties and Districts.	On hand July 1					Sold in year.	
	Working horses.	Breeding mares.	Other horses.	Total. No.	Total. Value.	No.	Value.
Algoma	2,790	613	779	4,182	$529,070	379	$46,617
Brant	5,962	1,305	2,087	9,354	1,037,267	642	71,904
Bruce	12,618	4,580	6,658	23,856	2,896,717	2,860	383,240
Carleton	8,360	2,435	3,529	14,324	1,675,118	1,480	180,560
Dufferin	6,700	2,345	3,032	12,077	1,391,961	1,281	160,125
Dundas	5,203	1,338	2,012	8,553	850,890	816	89,760
Durham	8,951	2,234	3,305	14,490	1,835,330	1,513	189,125
Elgin	10,101	2,786	4,390	17,277	1,848,920	1,822	209,530
Essex	11,365	3,469	5,768	20,602	2,209,969	1,831	219,720
Frontenac	7,136	1,931	3,004	12,071	1,217,577	889	88,890
Glengarry	5,722	2,166	2,915	10,803	1,117,551	1,037	116,812
Grenville	4,913	963	1,748	7,624	735,852	656	66,912
Grey	17,056	5,871	7,855	30,782	3,676,034	2,970	347,490
Haldimand	6,553	1,889	2,677	11,119	1,212,378	868	102,424
Haliburton	1,090	375	536	2,001	200,870	230	23,460
Halton	5,679	1,239	1,723	8,641	1,054,833	682	84,568
Hastings	12,114	2,351	4,104	18,569	1,920,737	1,440	142,560
Huron	15,736	6,109	8,037	29,882	3,952,518	3,876	546,516
Kent	15,838	3,595	6,351	25,784	2,663,274	1,966	218,226
Lambton	11,866	3,843	6,583	22,292	2,501,350	2,403	281,151
Lanark	6,898	1,500	2,641	11,039	1,240,934	1,145	135,110
Leeds	7,736	1,473	2,805	12,014	1,085,631	1,232	117,040
Lennox & Addington	8,182	1,731	3,081	12,994	1,314,407	907	88,886
Lincoln	6,186	1,291	1,907	9,384	1,044,345	708	81,420
Manitoulin	1,284	461	674	2,419	270,337	239	25,095
Middlesex	17,390	5,756	8,808	31,954	3,769,548	3,682	474,978
Muskoka	2,125	559	663	3,347	388,618	384	37,248
Nipissing	1,564	310	580	2,454	314,560	177	21,240
Norfolk	8,373	1,989	3,651	14,013	1,438,325	1,189	122,467
Northumberland	10,501	2,499	4,626	17,626	2,082,649	1,621	179,931
Ontario	11,462	3,530	4,751	19,743	2,502,190	1,798	240,932
Oxford	12,237	3,211	4,278	19,726	2,301,884	1,582	200,914
Parry Sound	2,179	538	771	3,488	408,364	401	45,313
Peel	7,445	2,543	3,315	13,303	1,643,433	1,390	183,480
Perth	12,505	4,566	5,941	23,012	3,025,918	2,768	379,216
Peterborough	7,211	1,609	2,401	11,221	1,261,010	916	108,088
Prescott	5,051	1,704	2,263	9,018	987,298	753	83,583
Prince Edward	6,169	1,225	2,230	9,624	978,802	692	71,968
Renfrew	8,104	2,293	3,193	13,590	1,635,017	1,373	155,149
Russell	3,300	1,387	1,335	6,022	631,594	390	45,240
Simcoe	18,369	5,886	7,778	32,033	4,131,438	2,731	371,416
Stormont	4,406	1,186	1,856	7,448	720,686	573	57,873
Victoria	7,718	2,800	4,055	14,573	1,804,761	1,440	171,360
Waterloo	8,695	2,190	2,551	13,436	1,606,731	1,245	148,155
Welland	6,942	1,138	2,196	10,276	1,144,243	764	91,680
Wellington	13,784	4,151	5,517	23,452	2,787,508	1,962	253,098
Wentworth	8,020	1,630	2,723	12,373	1,457,408	745	86,420
York	14,788	4,324	5,170	24,282	3,309,098	2,343	304,590
The Province:							
1906	404,377	114,917	168,853	688,147	79,814,953	64,761	7,851,480
1905	403,246	107,774	161,791	672,781	73,911,177	62,588	7,419,783
1904	399,262	102,658	153,634	655,551	68,138,228	63,310	6,836,499
1903	392,619	98,485	148,477	639,581	61,811,456	61,967	6,448,523
1902	393,307	93,425	139,374	626,106	55,173,637	54,538	5,079,127
1901	398,358	90,148	131,837	620,343	50,038,465	50,755	4,347,582
1900	465,883	90,136	121,290	617,309	46,916,999	47,926	3,774,480
1899	418,490	86,614	110,420	615,524	42,713,557	45,367	3,204,006
1898	430,504	77,886	102,851	611,241	38,659,896	44,404	2,884,107
1897	436,921	69,940	106 809	613,670	36,111,805	43,511	2,700,479

CATTLE.

TABLE XIX. Showing by County Municipalities of Ontario the number and value of cattle on hand on July 1, 1906, together with the totals for the Province for the past ten years; and also the number and value of cattle sold or slaughtered during the year ending June 30.

Counties and Districts.	On hand July 1.					Sold or slaughtered in year.	
	Milch cows.	Store cattle over 2 years.	Young and other cattle.	Total. No.	Total. Value.	No.	Value.
Algoma	6,857	3,611	10,526	20,994	$478,312	4,482	$125,630
Brant	13,505	4,144	16,194	33,843	940,497	9,078	320,453
Bruce	31,153	30,066	56,460	117,679	3,351,762	34,530	1,427,470
Carleton	38,100	14,155	32,757	85,012	2,141,249	18,283	614,492
Dufferin	13,909	12,539	23,359	49,807	1,283,408	12,102	481,660
Dundas	29,063	2,261	12,931	44,255	1,231,891	5,051	130,063
Durham	16,621	7,848	25,141	49,610	1,376,142	13,277	479,300
Elgin	28,126	16,912	33,917	78,955	2,379,369	24,458	917,175
Essex	19,703	9,134	26,553	55,390	1,394,983	14,114	387,429
Frontenac	34,041	7,515	20,143	61,699	1,587,525	10,636	296,213
Glengarry	32,081	3,844	15,882	51,807	1,296,365	6,313	159,845
Grenville	21,876	3,488	10,461	35,825	872,845	5,820	158,071
Grey	40,937	36,031	72,607	149,575	4,007,055	39,257	1,555,362
Haldimand	14,293	5,029	21,692	41,014	1,025,998	10,960	381,737
Haliburton	3,907	1,760	5,670	11,337	198,246	2,861	52,127
Halton	11,496	7,680	15,575	34,751	1,038,388	10,349	460,427
Hastings	50,980	7,946	36,367	95,293	2,108.885	15,136	412,456
Huron	33,839	44,622	66,280	144,741	4,745,995	46,634	2,116,717
Kent	24,264	24,146	39,248	87,658	2,568,431	23,355	853,158
Lambton	27,579	21,418	52,189	101,186	2,842,270	28,628	1,123,649
Lanark	28,870	11,783	28,984	69,637	1,610,999	15,704	534,250
Leeds	39,866	5,543	19,887	65,296	1,623,137	8,217	215,778
Lennox and Add.	28,513	5,929	21,603	56,045	1,315,321	9,154	264,551
Lincoln	10,141	2,759	9,703	22,603	619,991	5,538	199,645
Manitoulin	3,978	2,927	7,837	14,742	331,382	3,255	104,095
Middlesex	44,796	43,550	64,598	152,944	5,111,992	48,750	2,089,425
Muskoka	5,958	2,621	8,811	17,390	358,233	3,628	103,108
Nipissing	3,550	1,195	4,374	9,119	209,695	2,171	56,533
Norfolk	19,802	4,324	18,693	42,819	1,098,334	11,437	300,450
Northumberland	28,499	6,846	25,277	60,622	1,593,006	12,848	343,042
Ontario	23,766	13,617	38,272	75,655	2,180,327	18,790	784,107
Oxford	44,532	15,332	35,848	95,712	3,169,426	24,934	915,078
Parry Sound	6,373	3,096	10,268	19,737	407,829	4,977	129,999
Peel	15,942	14,228	19,499	49,669	1,516,747	17,256	739,074
Perth	34,349	23,397	53,517	111,263	3,157,140	30,296	1,180,332
Peterborough	23,161	8,878	25 118	57,157	1,203,966	11,359	295,334
Prescott	25,704	3.781	14,462	43,947	923.160	6,001	144,024
Prince Edward	18,025	2,259	9,964	30,248	817.904	5,274	128 844
Renfrew	28,229	19.271	36,822	84,322	1,739,408	15,862	413,046
Russell	18,065	3,497	10,742	32,304	777,577	4,958	114,034
Simcoe	35,642	24,759	56,730	117,131	2,854,494	29.191	1,063,136
Stormont	27,091	1,738	11.488	40,317	1,061,675	4,429	111,611
Victoria	19.584	14,757	32,387	66,728	1,526,084	15,234	480,480
Waterloo	16,225	5,881	21,812	43,918	1,265,482	20,089	808,381
Welland	11,389	3,823	13,378	28,590	733,041	8,851	279,515
Wellington	28,301	22,256	48,158	98,715	2,997,866	32,027	1,556,512
Wentworth	15,761	4,393	17,406	37,560	1,087,618	11.051	414,634
York	30,605	13,095	25,297	68,997	2,141,826	24,871	982,653
The Province							
1906	1,129,047	549,684	1,284,887	2,963,618	80,303,276	741,476	27,205,105
1905	1,106,984	533,903	1,248,616	2,889,503	76,764,482	714,007	25,871,468
1904	1,078,992	504,954	1,192,358	2,776,304	72,821,003	730,212	26,342,872
1903	1,050,108	484,276	1,139,877	2,674,261	69,289,924	719,911	25,867,813
1902	1,010,746	458,834	1,093,004	2,562,584	63,517,342	673,544	23,340,908
1901	984,012	445,868	1,077,740	2,507,620	59,527,119	610,880	20,286,963
1900	976,124	392,665	6,060,541	2,429,330	56,320,810	560,893	18,017,989
1899	974,474	356,505	987,376	2,318,355	52,938,560	555,583	17,303,426
1898	965,021	345,695	905,227	2,215,943	47,286,254	552,485	16,121,559
1897	940,236	365,406	876,684	2.182,326	42,683,557	503,007	13,350,223

SHEEP.

TABLE XX. Showing by County Municipalities of Ontario the number and value of sheep on hand July 1, 1906, together with the totals for the Province for the past ten years; also the number and value of sheep sold or slaughtered during the year ending June 30.

Counties and Districts.	On hand July 1.				Sold or slaughtered in year.	
	Over 1 Year.	Under 1 Year.	Total. No.	Total. Value.	No.	Value.
Algoma	9,792	7,817	17,609	$79,197	6,286	$27,596
Brant	9,106	7,107	16,213	99,289	6,489	31,017
Bruce	40,658	37,277	77,935	448,965	35,431	173,258
Carleton	9,837	9,357	19,191	88,153	8,553	31,903
Dufferin	17,685	17,600	35,285	169,634	15,514	74,777
Dundas	2,241	2,460	4,701	23,785	2,202	8,764
Durham	16,897	14,147	31,044	168,725	11,738	55,169
Elgin	15,089	14,640	29,729	170,807	13,805	67,921
Essex	5,534	5,744	11,278	53,865	3,636	13,417
Frontenac	14,395	13,609	28,004	130,504	15,767	62,280
Glengarry	4,862	3,978	8,840	45,186	3,180	14,246
Grenville	2,921	2,688	5,609	28,288	3,936	15,744
Grey	53,876	52,516	106,392	523,813	47,726	199,972
Haldimand	8,337	8,426	16,763	91,926	7,882	37,755
Haliburton	5,440	4,223	9,663	39,001	4,419	15,157
Halton	7,516	7,060	14,576	83,287	6,867	33,923
Hastings	22,780	19,816	42,596	173,461	16,942	64,210
Huron	24,359	23,755	48,114	299,447	19,253	93,185
Kent	12,366	11,249	23,615	115,018	11,769	56,727
Lambton	19,068	18,478	37,546	214,410	17,801	85,089
Lanark	20,374	19,561	39,935	190,651	16,876	64,466
Leeds	7,222	7,330	14,552	65,690	6,232	25,364
Lennox and Addington	10,043	8,399	18,442	93,315	9,008	37,383
Lincoln	7,195	6,318	13,513	83,745	5,451	27,637
Manitoulin	10,951	9,453	20,404	85,849	8,395	33,328
Middlesex	22,426	21,136	43,562	288,379	21,223	117,363
Muskoka	11,677	9,664	21,341	93,094	9,016	32,638
Nipissing	2,943	2,199	5,142	22,855	1,683	6,732
Norfolk	8,163	7,501	15,664	79,796	7,933	37,682
Northumberland	11,368	10,312	21,680	115,344	7,406	31,401
Ontario	22,479	19,876	42,355	242,301	17,689	85,261
Oxford	6,350	5,686	12,036	67,773	7,053	34,630
Parry Sound	11,735	10,110	21,845	100,016	10,493	39,873
Peel	6,521	6,768	13,289	78,751	8,436	41,674
Perth	8,846	8,335	17,181	96,682	8,030	39,588
Peterborough	12,569	11,635	24,204	103,773	9,941	37,179
Prescott	6,086	4,778	10,864	43,011	5,730	19,081
Prince Edward	3,500	3,568	7,068	32,176	3,448	13,447
Renfrew	33,126	28,917	62,043	227,936	22,585	82,435
Russell	4,107	4,058	8,165	38,055	4,265	17,145
Simcoe	49,686	41,289	90,975	419,667	31,813	147,294
Stormont	4,062	3,853	7,915	36,510	3,973	17,680
Victoria	23,281	18,843	42,124	201,401	17,857	72,857
Waterloo	6,526	6,202	12,728	70,020	6,818	34,704
Welland	5,746	5,322	11,068	54,497	5,180	25,071
Wellington	36,834	34,321	71,155	414,878	33,187	167,926
Wentworth	9,116	8,487	17,603	113,741	8,523	44,831
York	18,673	14,577	33,250	214,452	16,976	99,649
The Province:						
1906	684,364	620,445	1,304,809	6,721,119	574,416	2,596,429
1905	701,312	622,841	1,324,153	6,191,774	603,736	2,584,209
1904	772,730	682,752	1,455,482	6,425,100	687,144	2,896,391
1903	860,718	781,909	1,642,627	7,228,498	727,850	3,074,393
1902	915,217	800,296	1,715,513	7,634,284	732,994	3,110,882
1901	947,614	814,185	1,761,799	7,772,793	729,148	3,103,513
1900	949,597	847,616	1,797,213	7,711,496	790,058	2,872,609
1899	930,314	842,290	1,772,604	7,315,729	665,238	2,629,201
1898	877,872	799,142	1,677,014	6,499,695	664,239	2,460,379
1897	897,685	792,265	1,690,350	6,003,194	732,872	2,538,171

SWINE.

TABLE XXI. Showing by County Municipalities of Ontario the number and value of swine on hand July 1, 1906, together with the totals for the Province for the past ten years; also the number and value of the swine sold or slaughtered during the year ending June 30.

Counties and Districts.	On hand July 1.				Sold or slaughtered in year.	
	Over 1 year.	Under 1 year.	Total.		No.	Value.
			No.	Value.		
Algoma	1,419	5,086	6,505	$ 46,274	7,029	$ 82,520
Brant	4,624	28,006	32,630	223,615	41,866	432,894
Bruce	7,329	47,643	54,972	387,288	74,224	734,075
Carleton	4,484	24,705	29,189	206,320	29,624	290,315
Dufferin	3,879	30,336	34,215	230,184	45,481	445,259
Dundas	3,883	21,800	25,633	188,940	32,828	317,775
Durham	4,938	31,085	36,023	253,232	49,711	516,000
Elgin	8,527	59,489	68,016	449,108	77,521	778,311
Essex	17,421	90,436	107,857	705,115	100,710	995,015
Frontenac	3,506	17,643	21,149	160,740	25,354	263,175
Glengarry	4,322	15,473	19,795	147,112	20,715	203,421
Grenville	2,730	14,379	17,109	127,995	19,927	192,296
Grey	10,116	71,472	81,588	597,400	109,986	1,117,458
Haldimand	3,223	21,716	24 939	168,931	32,038	307,885
Haliburton	587	1,901	2,488	15,740	2,615	24,136
Halton	2,695	18,925	21,620	162,160	30,035	308,760
Hastings	7,941	41,153	49,094	390,246	58,651	600,586
Huron	8,434	64,155	72,589	513,866	96,435	990,387
Kent	13,937	90,652	104,589	676 186	111,530	1,108,608
Lambton	7,553	47,899	55,452	393.332	68,297	678,189
Lanark	3.542	19,024	22.566	150,985	25,353	257,333
Leeds	4,665	25,175	29,840	215,061	36,103	358,864
Lennox and Addington	3,199	17,492	20,691	151,953	28,912	297,794
Lincoln	2,520	16,287	18,807	141,093	24,291	253,112
Manitoulin	922	3.746	4,668	26,462	5,346	52,177
Middlesex	8,193	54,053	62,246	449,170	80,319	791.945
Muskoka	843	2,973	3.816	27,400	4,691	44.236
Nipissing	1.330	3,021	4,351	33,447	3,611	41,888
Norfolk	5,208	36,448	41,656	270,931	51,250	493,025
Northumberland	5,753	36,700	42,453	294,380	56.737	591,767
Ontario	6,213	48,502	54,715	391,153	65,027	658,073
Oxford	7,905	59,152	67,057	503,998	86,272	920.522
Parry Sound	1,114	3,999	5,113	37,289	6,730	66,560
Peel	4,291	23,952	28.243	198,998	40,566	423.103
Perth	7,598	62,986	70,584	514,960	89,533	923,085
Peterborough	4,173	22,947	27,120	171,947	37,227	358,124
Prescott	4.031	12.283	16,314	126,072	11,356	129,458
Prince Edward	3.475	16,710	20.185	151.550	24,832	239,877
Renfrew	7,048	17,706	24,754	166,113	18,746	195,333
Russell	2.368	9,668	12.036	79,919	11,252	114,770
Simcoe	12,592	79,779	92,371	605.487	110,881	1,146,510
Stormont	2,882	15,483	18,365	126,822	21.583	213,456
Victoria	5,121	28,085	33,206	231,059	43,450	431,893
Waterloo	5,109	41,972	47,081	350,935	62,779	656,668
Welland	2,321	14,323	16,644	122,431	20,778	201,131
Wellington	8,365	65,651	74,016	511,708	95,686	964.515
Wentworth	3,697	25.137	28,834	215,312	41,265	419,252
York	8,375	58,219	66,594	460,289	83,605	869.492
The Province:						
1906	254,351	1,565,427	1,819,778	12,770,708	2,222,758	22,501,028
1905	266,460	1,640,000	1,906,460	12,280,667	2,267,583	22.202,233
1904	279,502	1,729,482	2,008,984	12,921,743	2,240,083	22,665,164
1903	267,796	1,709,590	1,977,386	13,023,743	2,168,598	22,532,862
1902	238,992	1,445,643	1,684,635	11,262,265	1.991,907	20,154,190
1901	222,916	1,268,969	1,491,885	9,298,712	1,973,405	17.548,490
1900	265,457	1,506,184	1,771,641	9,598,153	2,056,049	15,800,799
1899	295,349	1,675,721	1,971,070	10,180,338	1,875.466	14,157,394
1898	265,048	1,375,739	1.640,787	8,720,242	1,592,697	11,852,535
1897	235,479	1,049,484	1,284,963	6,533,210	1.399,967	10,080.812

POULTRY.

TABLE XXII. Showing by County Municipalities of Ontario the number and value of Poultry on hand July 1, 1906, together with the totals for the Province for the past ten years; also the number and value of Poultry sold or killed during the year ending June 30.

Counties and Districts.	On hand July 1.				Sold or killed.		
	Turkeys.	Geese.	Ducks.	Other fowls.	Total value.	No.	Value.
Algoma	3,329	1,532	894	61,700	$23,896	21,635	$ 8,438
Brant	1,946	2,475	3,394	126,096	52,169	51,127	21,985
Bruce	20,682	14,449	14,136	268,393	117,480	81,904	30,304
Carleton	16,780	11,317	7,753	222,349	101,902	109,373	48,124
Dufferin	12,984	8,527	6,624	118,739	55,551	49,833	17,940
Dundas	11,051	3,142	3,100	147,857	57,356	44,540	16,925
Durham	9,259	8,083	5,873	194,915	85,119	69,142	26,274
Elgin	25,721	5,479	7,096	252,146	104,449	109,083	44,724
Essex	23,584	7,517	15,514	358,936	122,485	135,563	46,091
Frontenac	13,293	2,234	3,086	118,118	54,671	57,509	21,278
Glengarry	5,347	2,364	720	124,894	43,657	47,013	15,984
Grenville	9,724	3,834	1,986	94,911	38,874	40,509	15,393
Grey	25,697	14,560	16,705	371,587	155,912	135,826	54,330
Haldimand	8,355	5,410	3,194	135,868	57,410	60,633	22,434
Haliburton	1,437	479	351	18,170	7,585	7,491	2,547
Halton	6,119	4,838	6,411	113,112	53,545	54,886	23,052
Hastings	9,218	7,957	3,139	227,833	82,300	84,664	30,479
Huron	31,353	13,350	21,991	414,569	160,463	139,547	57,214
Kent	25,367	7,917	15,748	389,144	155,735	143,213	54,421
Lambton	30,812	9,105	16,627	370,527	146,138	143,232	57,293
Lanark	8,244	7,112	2,550	143,742	54,350	43,805	17,522
Leeds	11,914	4,726	3,709	144,774	61,599	54,129	18,945
Lennox & Addington	6,539	2,814	2,885	155,081	59,871	58,411	20,444
Lincoln	3,574	1,383	5,307	132,630	53,179	65,570	27,539
Manitoulin	1,269	1,147	374	23,046	8,641	7,461	3,059
Middlesex	53,545	10,081	15,868	465,915	217,653	182,940	73,176
Muskoka	2,508	903	1,058	48,200	19,820	21,720	8,471
Nipissing	1,410	572	120	29,271	12,769	12,763	5,488
Norfolk	14,521	4,148	4,344	217,102	82,239	91,868	35,829
Northumberland	11,999	5,023	4,269	220,104	80,111	70,079	28,032
Ontario	8,261	11,114	8,547	251,353	105,846	100,737	43,317
Oxford	14,141	5,447	6,772	261,780	102,987	90,289	35,213
Parry Sound	2,048	1,546	528	47,028	17,882	18,368	6,612
Peel	13,292	6,731	11,967	163,038	80,943	93,845	42,230
Perth	15,032	11,230	16,813	333,716	124,512	88,193	34,395
Peterborough	14,810	7,309	3,070	162,738	64,851	53,881	21,552
Prescott	3,945	4,152	1,346	109,971	40,241	37,335	13,067
Prince Edward	8,068	1,729	1,934	119,796	48,336	37,618	13,919
Renfrew	7,533	7,057	2,387	147,420	62,101	51,415	20,052
Russell	3,667	1,295	853	68,613	28,070	28,535	10,558
Simcoe	22,613	14,114	15,792	386,501	155,123	133,447	52,044
Stormont	4,040	2,167	1,240	124,588	45,845	41,583	14,138
Victoria	8,716	7,623	6,723	199,183	76,884	74,100	28,158
Waterloo	2,233	3,626	5,684	163,962	56,386	47,654	17,632
Welland	3,954	1,875	3,808	144,530	53,307	69,971	26,589
Wellington	12,735	13,322	10,607	274,852	114,303	111,090	44,436
Wentworth	3,711	2,968	5,943	143,588	57,357	69,805	31,412
York	10,725	9,703	15,243	275,474	135,435	130,373	65,187
The Province :							
1906	567,105	285,786	314,083	9,087,860	3,697,338	3,473,708	1,374,246
1905	566,068	287,405	294,976	8,590,044	3,335,660	3,340,802	1,300,253
1904	578,219	288,723	301,711	8,244,030	3,077,029	3,537,358	1,354,486
1903	647,056	317,910	358,802	8,359,805	2,973,646	3,684,451	1,407,340
1902	732,359	332,781	397,333	8,300,335	2,957,286	3,674,198	1,398,289
1901	825,823	360,278	435,094	8,124,041	2,859,172	3,495,999	1,305,555
1900	890,933	398,890	457,072	7,794,346	2,727,363	3,164,287	1,176,740
1899	927,456	421,830	158,497	7,536,241	2,658,321	3,102,614	1,162,991
1898	1,024,285	454,335	{ 7,605,653 }		2,578,136	3,072,767	1,131,923
1897	890,228	409,715	{ 7,135,398 }		2,318,038	2,965,221	1,083,914

WOOL.—BEES.

TABLE XXIII. Showing by County Municipalities of Ontario the number, weight and value of fleeces of the wool clip in 1906, together with the totals of the Province for the past ten years; also the number of colonies of bees and the value of apiaries.

Counties and Districts.	Clip of Wool.				Colonies of Bees.		
	No.	Pounds.	Lbs. per fleece.	Value.	No.	Value, including outfit.	Value per hive.
				$		$	$ c.
Algoma	9,757	61,520	6.31	9,843	109	654	6 00
Brant	9,257	67,298	7.27	10,768	4,987	32,366	6 49
Bruce	40,842	266,220	6.52	42,595	5,915	32,769	5 54
Carleton	9,527	55,792	5.86	8,927	5,163	28,500	5 52
Dufferin	17,668	117,368	6.64	18,779	3,926	21,986	5 60
Dundas	2,294	14,502	6.32	2,320	3,330	18,914	5 68
Durham	16,640	136,839	8.22	21,894	3,853	17,916	4 65
Elgin	14,983	98,379	6.57	15,741	5,737	33,504	5 84
Essex	5,571	37,771	6.78	6,043	7,154	36,128	5 05
Frontenac	14,050	85,209	6.06	13,634	6,029	33,943	5 63
Glengarry	4,986	29,804	5.98	4,769	4,358	20,090	4 61
Grenville	2,829	15,963	5.64	2,554	4,274	26,200	6 13
Grey	53,970	347,618	6.44	55,619	6,919	43,728	6 32
Haldimand	8,320	61,187	7.35	9,790	6,218	34,137	5 49
Haliburton	5,492	33,296	6.06	5,327	657	3,285	5 00
Halton	7,442	56,221	7.55	8,995	983	6,557	6 67
Hastings	23,445	135,449	5.77	21,672	4,646	27,411	5 90
Huron	24,422	157,290	6.44	25,167	8,614	50,995	5 92
Kent	12,518	101,162	8.08	16,186	5,376	27,525	5 12
Lambton	19,289	133,577	6.93	21,372	7,239	38,729	5 35
Lanark	20,258	114,547	5.65	18,328	6,276	32,196	5 13
Leeds	7,133	42,125	5.91	6,740	6,638	33,190	5 00
Lennox and Addington	9,858	64,800	6.57	10,368	5,139	26,414	5 14
Lincoln	6,845	43,299	6.33	6,928	2,014	12,527	6 22
Manitoulin	10,691	65,370	6.11	10,459	1,417	7,482	5 28
Middlesex	22,086	168,215	7.62	26,914	14,110	81,697	5 79
Muskoka	11,685	62,907	5.38	10,065	288	1,613	5 60
Nipissing	2,948	16,731	5.67	2,677	100	514	5 14
Norfolk	8,126	52,357	6.44	8,377	4,558	27,895	6 12
Northumberland	11,346	73,295	6.46	11,727	6,825	35,217	5 16
Ontario	23,036	184,596	8.01	29,535	3,154	19,555	6 20
Oxford	6,474	46,051	7.11	7,368	2,824	18,977	6 72
Parry Sound	11,699	73,382	6.27	11,741	152	836	5 50
Peel	6,906	53,322	7.72	8,532	2,183	13,382	6 13
Perth	8,802	56,109	6.37	8,977	3,837	26,360	6 87
Peterborough	12,847	77,096	6.00	12,335	870	5,229	6 01
Prescott	6,025	37,416	6.21	5,987	7,707	45,471	5 90
Prince Edward	3,595	22,176	6.16	3,548	1,864	9,059	4 86
Renfrew	32,416	164,728	5.08	26,356	5,090	27,486	5 40
Russell	4,397	26,975	6.11	4,316	732	3,697	5 05
Simcoe	49,472	361,172	7.30	57,788	4,146	22,181	5 35
Stormont	4,141	25,656	6.20	4,105	3,358	16,790	5 00
Victoria	22,948	139,682	6.09	22,349	4,275	27,916	6 53
Waterloo	6,385	45,004	7.05	7,201	1,350	8,640	6 40
Welland	5,791	34,512	5.96	5,522	4,388	21,940	5 00
Wellington	37,335	269,325	7.21	43,092	1,524	8,885	5 83
Wentworth	9,370	69,557	7.42	11,129	2,722	18,237	6 70
York	18,891	141,111	7.47	22,578	3,359	23,513	7 00
The Province:							
1906	684,808	4,543,981	6.64	727,037	196,387	1,112,236	5 66
1905	703,388	4,634,922	6.59	764,762	204,033	1,145,919	5 62
1904	778,837	4,972,042	6.38	581,729	201,064	1,146,592	5 70
1903	865,503	5,419,900	6.26	541,990	207,936	1,180,165	5 68
1902	916,092	5,690,673	6.21	728,406	202,529	1,150,523	5 68
1901	950,229	5,834,097	6.14	781,769	202,247	1,114,099	5 51
1900	957,307	5,805,921	6.06	894,112	216,734	1,139,559	5 26
1899	928,184	5,525,122	5.95	790,092	203,343	1,053,454	5 18
1898	865,179	5,104,686	5.90	847,378	190,080	998,049	5 25
1897	887,003	6,139,984	5.79	945,757	166,811	885,196	5 31

FARM PROPERTY, IMPLEMENTS AND LIVE STOCK.

TABLE XXIV. Showing by County Municipalities of Ontario the value of farm lands, buildings, implements and live stock for the year 1906, together with the totals for the Province for the past ten years; also the aggregate value of live stock sold or slaughtered as determined from Tables xviii-xxii.

Counties and Districts.	Land.	Buildings.	Implements.	Live Stock.	Total.	Value of Live Stock sold or killed.
	$	$	$	$	$	$
Algoma	5,250,365	1,392,139	518,061	1,156,749	8,317,314	290,801
Brant	8,855,282	4,494,140	1,057,098	2,352,837	16,759,357	878,253
Bruce	24,910,286	9,591,732	2,309,990	7,202,212	44,014,220	2,748,347
Carleton	18,788,349	6,639,204	1,730,114	4,212,742	31,370,409	1,165,394
Dufferin	11,082,886	4,299,487	1,056,343	3,130,738	19,569,454	1,179,761
Dundas	8,472,132	3,755,930	1,103,175	2,352,862	15,684,099	563,287
Durham	12,917,477	5,419,330	1,345,057	3,718,548	23,400,412	1,265,868
Elgin	17,509,590	7,324,015	1,792,474	4,952,653	31,578,732	2,017,661
Essex	17,689,626	6,753,589	2,022,935	4,486,417	30,952,567	1,661,672
Frontenac	10,156,438	4,185,679	1,286,902	3,151,017	18,780,036	731,836
Glengarry	8,807,189	3,911,000	1,110,836	2,649,871	16,478,896	510,308
Grenville	6,926,083	3,534,220	870,801	1,803,854	13,134,958	448,416
Grey	25,482,379	12,007,427	3,221,137	8,960,214	49,671,157	3,271,612
Haldimand	8,243,385	4,388,335	1,179,784	2,556,643	16,368,147	852,235
Haliburton	1,219,072	488,533	179,780	461,412	2,348,827	117,127
Halton	9,309,240	4,307,267	928,492	2,392,213	16,937,212	910,730
Hastings	17,103,045	6,592,040	2,004,869	4,675,629	30,375,583	1,250,291
Huron	30,378,997	12,655,895	2,921,578	9,672,289	55,628,760	3,804,019
Kent	26,157,102	9,838,206	2,832,300	6,178,644	45,006,252	2,291,140
Lambton	22,050,541	7,974,350	2,168,826	6,097,500	38,291,217	2,225,371
Lanark	11,323,438	4,146,249	1,137,157	3,247,919	19,854,763	1,008,681
Leeds	11,913,820	4,804,800	1,227,285	3,051,118	20,997,023	735,991
Lennox and Add.	10,183,389	4,787,555	1,275,657	2,934,867	19,181,468	709,058
Lincoln	9,648,277	4,462,993	1,090,581	1,942,353	17,144,204	589,353
Manitoulin	1,457,018	562,641	225,030	722,671	2,967,360	217,754
Middlesex	33,804,990	13,311,008	3,096,978	9,836,742	60,049,718	3,546,887
Muskoka	2,552,290	1,108,783	380,613	887,165	4,928,851	225,701
Nipissing	2,625,828	692,400	317,685	593,326	4,229,239	131,881
Norfolk	12,021,547	5,449,717	1,530,646	2,969,625	21,971,535	989,453
Northumberland.	14,102,580	6,559,145	1,719,575	4,165,490	26,546,790	1,174,173
Ontario	18,143,041	7,707,319	1,854,647	5,421,817	33,126,824	1,811,690
Oxford	22,354,900	9,308,311	2,218,294	6,146,068	40,027,573	2,106,357
Parry Sound	2,229,849	974,243	387,508	971,380	4,562,980	288,357
Peel	12,444,303	5,889,833	1,364,240	3,518,872	23,217,248	1,429,561
Perth	23,438,266	9,982,063	2,423,913	6,919,212	42,763,454	2,556,616
Peterborough	11,447,449	3,709,699	1,068,069	2,805,547	19,030,764	820,277
Prescott	8,819,300	3,882,667	1,057,503	2,119,782	15,879,252	389,213
Prince Edward	7,700,080	3,690,861	983,232	2,028,768	14,402,941	468,055
Renfrew	12,717,597	4,903,333	1,589,570	3,830,575	23,041,075	866,015
Russell	6,320,350	2,445,007	735,130	1,555,215	11,055,702	301,747
Simcoe	29,290,777	11,740,298	3,279,830	8,166,209	52,477,114	2,780,400
Stormont	7,449,690	3,312,643	806,343	1,991,538	13,560,214	414,758
Victoria	13,042,012	4,357,725	1,301,234	3,840,189	22,541,160	1,184,748
Waterloo	12,956,029	6,222,818	1,449,129	3,349,554	23,977,530	1,665,540
Welland	9,176,877	4,086,662	1,009,034	2,107,519	16,380,092	623,986
Wellington	22,826 270	9,866,486	2,331,869	6,826,263	41,850,888	2,986,487
Wentworth	13,000,550	5,753,579	1,359,408	2,931,436	23,044,973	996,549
York	26,899,939	10,142,830	2,336,907	6,261,100	45,640,776	2,321,571
The Province:						
1906	661,199,920	273,414,187	71,197,619	183,307,394	1,189,119,120	61,528,288
1905	649,201,364	264 381,514	68,629,546	172,483,760	1,154,699,184	59,378,046
1904	640,544,541	257,995,484	65,992,210	163,383,103	1,127,915,338	60,095,412
1903	620,869,475	247,629,153	63,996,190	154,327,267	1,086,822,085	59,330,931
1902	604,860,063	237,289,668	62,199,787	140,544,814	1,044,894,332	53,083,396
1901	585,354,294	226 575,228	59,897,513	129,496,261	1,001,323,296	46,592,103
1900	574,727,610	219,488,370	57,324,130	123,274,821	974,814,931	41,642,617
1899	563,271,777	213,410,281	54,994,857	115,806,445	947,513,360	38,457,018
1898	556,246,569	210,054,396	52,977,232	103,744,223	923,022,420	34,450,583
1897	554,054,552	206,090,159	51,299,098	93,649,804	905,093,613	29,753,599

FARM VALUES AND RENTALS.

TABLE XXV.—Showing by County Municipalities of Ontario, average values per acre of farm property in 1906 and rentals of leased farms based upon (1) the total acreage occupied, and (2) the area cleared, together with the average for the Province for the past ten years.

Counties and Districts.	Farm values, average per acre occupied.					Value buildings, implements and live stock per acre cleared.	Rent per acre on land.	
	Land.	Buildings.	Implements.	Live Stock.	Total.		Occupied.	Cleared.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Algoma	5 22	1 39	52	1 15	8 28	37 69	70	2 13
Brant	41 01	20 81	4 90	10 90	77 62	44 45	2 40	2 82
Bruce	27 00	10 40	2 50	7 81	47 71	34 84	1 77	2 26
Carleton	33 25	11 75	3 06	7 45	55 51	36 61	1 90	2 66
Dufferin	31 20	12 10	2 97	8 81	55 08	33 32	1 76	2 14
Dundas	35 79	15 87	4 66	9 94	66 26	43 45	1 89	2 54
Durham	34 89	14 64	3 63	10 04	63 20	35 15	2 27	2 57
Elgin	40 25	16 84	4 12	11 39	72 60	41 06	2 69	3 20
Essex	41 49	15 84	4 74	10 52	72 59	41 37	2 58	3 04
Frontenac	14 64	6 04	1 86	4 54	27 08	28 47	1 67	2 28
Glengarry	30 46	13 52	3 84	9 16	56 98	38 55	1 71	2 52
Grenville	25 39	12 95	3 19	6 61	48 14	34 59	1 32	1 78
Grey	23 76	11 20	3 00	8 35	46 31	35 20	1 53	2 00
Haldimand	29 31	15 61	4 20	9 09	58 21	34 40	1 69	2 05
Haliburton	2 11	84	31	80	4 06	27 98	61	1 19
Halton	41 41	19 16	4 13	10 64	75 34	44 20	2 10	2 96
Hastings	16 12	6 21	1 89	4 41	28 63	30 48	1 41	2 00
Huron	37 99	15 83	3 65	12 10	69 57	39 10	2 15	2 56
Kent	46 04	17 32	4 98	10 88	79 22	41 22	2 88	3 30
Lambton	33 42	12 08	3 29	9 24	58 03	34 47	1 85	2 40
Lanark	16 79	6 15	1 69	4 81	29 44	26 77	1 50	2 12
Leeds	25 44	10 26	2 62	6 52	44 84	34 21	1 60	2 32
Lennox & Addington	23 03	10 83	2 89	6 64	43 39	32 91	1 75	2 18
Lincoln	50 64	23 42	5 72	10 20	89 98	45 93	2 16	2 62
Manitoulin	5 65	2 18	87	2 81	11 51	35 46	68	1 64
Middlesex	44 61	17 56	4 09	12 98	79 24	40 15	2 27	2 89
Muskoka	4 60	2 00	68	1 60	8 88	37 14	65	2 30
Nipissing	4 98	1 31	60	1 13	8 02	35 54	65	2 00
Norfolk	30 13	13 66	3 84	7 44	55 07	36 90	2 08	2 62
Northumberland	32 19	14 97	3 92	9 51	60 59	36 43	2 00	2 47
Ontario	36 11	15 34	3 69	10 79	65 93	40 79	2 40	2 80
Oxford	47 45	19 76	4 71	13 04	84 96	45 03	2 71	3 30
Parry Sound	3 71	1 62	64	1 62	7 59	31 71	48	1 70
Peel	43 18	20 44	4 73	12 21	80 56	41 43	2 27	2 68
Perth	45 27	19 28	4 68	13 36	82 59	43 29	2 35	2 74
Peterborough	20 01	6 48	1 87	4 90	33 26	29 48	1 49	2 17
Prescott	30 30	13 34	3 63	7 28	54 55	35 86	1 65	2 85
Prince Edward	33 25	15 94	4 25	8 76	62 20	34 75	2 52	2 86
Renfrew	12 41	4 79	1 55	3 74	22 49	29 21	1 25	2 12
Russell	24 93	9 64	2 89	6 14	43 60	39 14	1 85	2 32
Simcoe	30 33	12 16	3 40	8 46	54 35	36 64	1 96	2 46
Stormont	29 96	13 33	3 24	8 01	54 54	40 20	1 57	2 26
Victoria	21 65	7 24	2 16	6 38	37 43	33 61	2 04	2 62
Waterloo	42 19	20 27	4 72	10 91	78 09	43 86	2 27	2 74
Welland	40 32	17 95	4 43	9 26	71 96	38 88	1 90	2 40
Wellington	36 31	15 70	3 71	10 86	66 58	38 46	1 98	2 48
Wentworth	47 96	21 23	5 02	10 81	85 02	47 76	2 75	3 20
York	50 09	18 88	4 35	11 66	84 98	42 67	3 00	3 40
The Province:								
1906	27 23	11 26	2 93	7 55	48 97	37 42	2 00	2 65
1905	26 84	10 92	2 84	7 14	47 74	36 28	1 96	2 55
1904	26 53	10 69	2 73	6 77	46 72	35 29	1 91	2 49
1903	25 95	10 35	2 67	6 45	45 42	34 15	1 89	2 47
1902	25 49	10 00	2 62	5 93	44 04	32 43	1 85	2 47
1901	24 76	9 59	2 53	5 48	42 36	30 96	1 82	2 46
1900	24 37	9 31	2 43	5 23	41 34	30 09	1 80	2 48
1899	24 02	9 10	2 34	4 94	40 40	29 31	1 77	2 51
1898	23 78	8 98	2 26	4 44	39 46	28 33	1 76	2 50
1897	23 72	8 82	2 20	4 01	38 75	27 31	1 73	2 44

MARKET PRICES.

TABLE XXVI. The following table is compiled from thirty-four well distributed market points from quotations in the local press. The figures for the four months September-December, 1906, are also given, together with the average price for the past ten years, and the average for twenty-five years, 1882-1906.

Counties and Districts.	Fall Wheat, per bush.	Spring Wheat, per bush.	Barley, per bush.	Oats, per bush.	Peas, per bush.	Beans, per bush.	Rye, per bush.	Buckwheat, per bush.	Corn (in ear), per bush.	Hay, per ton.	Potatoes, per bush.	Wool, per lb.
	cts.	cts.	cts.	cts.	cts.	$ c.	cts.	cts.	cts.	$ c.	cts.	cts.
Amherstburg	65 8	68.0	40.7	31.2	.....	.....	.....	.....	36.5	7 13	47.6	....
Barrie	68.8	65.6	15.0	33.3	72.2	.....	59.6	46.4	38.0	9 27	52.3	15.1
Belleville	69.6	75.0	47.4	35.8	75.0	.....	62.0	55.0	.....	8 92	62.8	16.0
Bowmanville	73.6	69.8	47.3	33.1	68.9	.....	63.2	49.6	.....	5 50	16.0	14.5
Bracebridge	.....	.....	.....	40.9	78.7	.....	.....	.....	.....	10 00	57.7	16.3
Brampton	71.0	68.6	49.3	33.6	73.2	.....	67.3	.....	.....	.....	53.1	....
Brantford	68.3	67 5	45.5	33.0	69.3	.....	63.3	51.8	38.0	7 51	61.3	....
Chatham	70.0	....	45.7	31.9	.....	1 08	.....	.....	38.1	9 17	61.5	....
Cornwall	.....	.....	50.0	37.7	.....	.....	.....	50.0	.....	8 90	51.8	....
Dunnville	67 4	67.4	41.9	31.5	65.5	.....	55.0	52.6	34.1	7 09	60.4	....
Forest	68.2	....	40.6	32.5	63.3	1 08	.....	.....	45.0	6 85	52.6	16.4
Goderich	70.1	68.5	42.2	32.3	70.0	.....	45.0	50.4	.....	7 78	46.9	16.0
Guelph	68.6	....	44.2	32.9	71.7	.....	69.3	48.0	41.7	9 99	54.6	15.3
Hamilton	73.4	....	48.0	36.8	69.7	.....	67.0	50.0	40.0	9 65	63.1	16.0
Lindsay	67.5	63.7	42.5	31.7	69.6	.....	59.3	48.3	.....	9 35	49.0	15.5
London	70.3	....	46.4	35.9	68.8	.....	54.5	55.0	40 0	11 95	52.7	....
Oakville	70.6	68.7	46.5	33.2	66.1	.....	57.9	.....	.....	8 00	48.6	....
Orangeville	71.6	70.2	44.6	32.2	72.4	.....	67.5	47.9	.....	8 03	50.4	15.9
Ottawa	.....	.....	.....	38.0	.....	.....	.....	.....	.....	17 89	58.7	....
Owen Sound	70.6	70.0	46.0	35.2	75.5	.....	.....	49.7	.....	11 30	45.5	....
Pembroke	74.6	73.7	42.1	33.6	72.8	1 70	51.4	42.1	36.7	11 27	50.3	17.3
Peterborough	69.7	65.3	43.3	33.5	73.1	.....	60.9	46.8	.....	12 80	49.6	....
Picton	70.3	70.3	46.2	34.1	75.3	1 27	57.2	50.6	.....	7 43	62.7	15 0
St. Catharines	70.9	....	....	39.6	.....	1 33	.....	.....	40.5	10 74	58.6	15.5
St. Thomas	69.5	....	42.0	30.2	65.7	.....	.....	.....	34.1	10 21	51.9	....
Sault Ste. Marie	95.0	....	52.5	42.5	72.5	.....	.....	.....	.....	9 50	63.3	....
Simcoe	69.0	70.5	44.5	32.7	71.3	.....	64.3	49.0	33.9	8 47	53.9	....
Stratford	68.3	67 9	40.7	31.8	70.9	.....	.....	.....	.....	7 32	50 2	....
Toronto	73.7	70.7	52.1	38.2	77.1	1 63	71.2	54.3	46.7	13 12	59 5	16 0
Uxbridge	70.9	67.3	43.3	33.1	72.1	.....	62.9	46.9	.....	7 50	41.1	17.5
Walkerton	69.7	....	46.0	34.1	71.7	.....	.....	.....	.....	8 89	48.2	18.3
Waterloo	74.6	....	44.5	35.2	65.2	.....	.....	.....	39.3	7 49	56.5	16.0
Welland	69.6	69.6	46.2	33.1	64.7	1 65	50.0	50.0	32.5	8 94	58.1	....
Woodstock	69.1	69.5	44.4	32.7	68.2	1 34	58.6	50.0	.....	9 37	53.9	14.3
The Province:												
September	71.3	69.3	44.0	32.6	68.3	1 37	57.8	48 7	38.9	8 53	53.6	16.2
October	70.9	68.8	44.5	33.7	69.7	1 38	60.3	48.6	37.7	8 60	53.2	16.1
November	70.5	69.0	45.4	34.7	71.7	1 36	62.2	50.3	37.0	9 30	53.6	15.9
December	67.0	68.6	46.3	35.2	72.6	1 44	63.6	50.3	36.8	10 11	54.9	15.7
1906	70.7	68.9	45.0	34.0	70.6	1 39	60.9	49.5	37.6	9 10	53.8	16.0
1905	76.5	74.9	42.9	33.6	65.3	1 32	56.8	50.0	36.9	7 72	46.0	16.5
1904	98.7	94.2	43.7	32.3	63.0	1 22	57.6	48.6	37.4	7 97	50.7	11.7
1903	75.1	74.4	42.1	29.3	64.3	1 41	48.6	44.3	36.9	7 94	44.1	10.0
1902	70.7	69.6	45.1	34.8	71.0	1 35	50.5	48.0	40.6	8 15	56.5	12.8
1901	66.1	66.8	45.0	36.2	65.3	1 25	49.3	48.4	38.0	7 99	42.6	13.4
1900	66.4	67.5	38.9	26.5	57.1	1 00	48.5	43.7	31.7	8 48	26.1	15.1
1899	66.7	66.5	39.5	27.7	57.3	1 08	50.0	45.5	19.8	7 72	32.8	14.3
1898	69.4	69.2	38.0	25.8	52.2	70	43.5	38.2	20.1	6 22	44.1	16.6
1897	78.2	78.6	27.0	22.6	42.1	65	37.7	30 0	19.7	7 18	39.9	18.1
1882-1906	78.2	80.5	16.9	31.7	58.6	1 09	52.0	41.5	*28.7	8 81	41.1	16.9

* Average fifteen years 1892-1906.

AGRICULTURAL STATISTICS OF THE UNITED STATES.

Wheat.

Year.	Acres.	Bushels.	Average yield per acre.	Total value.
1906	47,305,829	735,260,970	15.5	$490,332,760
1905	47,854,079	692,979,489	14.5	518,372,727
1904	44,074,875	552,399,517	12.5	510,489,874
1903	49,464,967	637,821,835	12.9	443,024,826
1902	46,202,424	670,063,008	14.5	422,224,117
1901	49,895,514	748,460,218	15.0	467,350,156
1900	42,495,385	522,229,505	12.3	323,525,177
1899	44,592,516	547,303,846	12.3	319,545,259
1898	44,055,278	675,148,705	15.3	392,770,320
1897	39,465,066	530,149,168	13.4	428,547,121
1896	34,618,646	427,684,346	12.4	310,602,539
1895	34,047,332	467,102,947	13.7	237,938,998
1894	34,884,436	460,267,416	13.2	225,902,025
1893	34,629,418	396,131,725	11.4	213,171,381
1892	38,554,430	515,949,000	13.4	322,111,881
1891	39,916,897	611,780,000	15.3	513,472,711

Corn.

Year.	Acres.	Bushels.	Average yield per acre.	Total value.
1906	96,737,581	2,927,416,091	30.3	$1,166,626,479
1905	94,011,369	2,707,993,540	28.8	1,116,696,738
1904	92,231,581	2,467,480,934	26.8	1,087,461,440
1903	88,091,993	2,244,176,925	25.5	952,868,801
1902	94,043,613	2,523,648,312	26.8	1,017,017,349
1901	91,349,928	1,522,519,891	16.7	921,555,763
1900	83,320,872	2,105,102,526	25.3	751,220,034
1899	82,108,587	2,078,143,933	25.3	629,210,110
1898	77,721,781	1,924,184,660	24.8	552,023,428
1897	80,095,051	1,902,967,933	23.8	501,072,952
1896	81,027,156	2,283,875,165	28.2	491,006,967
1895	82,075,830	2,151,138,580	26.2	544,985,534
1894	62,582,269	1,212,770,052	19.4	554,719,162
1893	72,036,465	1,619,496,131	22.5	591,625,627
1892	70,626,658	1,628,464,000	23.1	642,146,630
1891	76,204,515	2,060,154,000	27.0	836,439,228
1881	64,262,025	1,194,916,000	18.6	759,482,170

Other Crops.

	1906.		1905.		1904.	
	Acres.	Bushels.	Acres.	Bushel .	Acres.	Bushels.
Oats	30,958,768	964,904,522	28,046,746	953,216,197	27,842,669	894,595,552
Barley	6,323,757	178,916,484	5,095,528	136,651,020	5,145,878	139,748,958
Rye	2,001,904	33,374,833	1,730,159	28,485,952	1,792,673	27,241,515
Buckwheat	789,208	14,641,937	760,118	14,585,082	793,625	15,008,336

Figures for United States are in Winchester bushels.

CROPS IN THE NORTHWEST PROVINCES OF CANADA.

Year.	Wheat.		Oats.		Barley.		Flax.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
Alberta.								
1902	45,064	850,122	118,997	3,776,976	22,201	473,108	373	4,476
1903	63,391	1,200,598	162,314	5,187,511	42,219	1,077,271	830	7,753
1904	55,707	938,200	180,698	5,609,496	61,549	1,608,241	367	5,003
1905	107,527	2,306,524	242,801	9,514,180	64,830	1,773,914	581	8,337
1906	177,127	3,966,020	335,728	13,136,913	73,588	2,157,957	3,647	38,191
Saskatchewan								
1902	580,860	13,110,330	193,200	6,975,796	14,275	298,632	16,694	153,709
1903	777,822	15,121,015	280,096	9,164,007	27,679	665,593	31,644	285,697
1904	910,359	15,944,730	346,530	10,756,350	24,650	598,336	15,917	166,134
1905	1,130,084	26,107,286	449,936	19,213,055	32,946	893,396	25,315	398,399
1906	1,730,586	37,040,098	639,893	23,965,528	53,565	1,316,415	76,005	710,689
Manitoba.								
1889	623,245	7,201,519	218,744	3,415,104	80,238	1,051,551	.....	.....
1890	746,058	14,655,769	235,534	9,513,443	60,035	2,069,415	.....	.....
1891	916,614	23,191,599	305,644	14,752,605	89,828	3,197,876	.....	.....
1892	875,990	14,453,835	332,974	11,654,090	97,644	2,831,676	.....	.....
1893	1,003,640	15,615,923	388,529	9,823,935	114,762	2,547,653	9,737	116,454
1894	1,010,186	17,172,883	413,686	11,907,854	119,528	2,981,716	30,500	336,000
1895	1,140,276	32,775,038	482,653	22,555,733	153,839	5,645,036	.....	1,281,354
1896	999,598	14,371,806	442,445	12,502,318	127,885	3,171,747	.....	259,143
1897	1,290,882	18,261,950	468,141	10,629,513	153,266	3,183,602	.....	247,836
1898	1,488,232	25,313,745	514,824	17,308,252	158,058	4,277,927	.....	350,000
1899	1,629,995	27,922,230	575,136	22,318,378	182,912	5,379,156	21,780	304,420
1900	1,457,396	13,025,252	429,108	8,814,312	155,111	2,939,477	20,437	164,313
1901	2,011,835	50,502,085	689,951	27,796,588	191,009	6,536,155	20,978	266,420
1902	2,039,940	53,077,267	725,060	34,478,160	329,790	11,848,422	41,200	564,440
1903	2,442,873	40,116,878	855,431	33,035,774	326,537	8,707,252	55,900	586,950
1904	2,412,235	39,162,458	943,574	36,289,979	361,004	11,177,970	35,428	464,106
1905	2,643,588	55,761,417	1,031,239	45,484,025	432,298	14,064,176	24,770	326,964
1906	3,141,537	61,250,413	1,155,961	50,692,978	474,242	17,532,554	18,790	274,330

OTHER CROPS IN MANITOBA.

Year.	Rye.		Peas.		Potatoes.		Roots.	
	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.	Acres.	Bushels.
1893	2,229	29,422	.....	.....	.....	1,649,385	20,919	3,896,798
1894	.....	59,924	.....	18,434	.....	2,035,336	7,880	1,841,942
1895	.....	81,082	.....	28,229	16,716	4,042,562	6,785	2,285,283
1896	.....	52,255	.....	23,383	12,260	1,962,490	6,715	1,898,805
1897	.....	48,344	.....	33,380	13,576	2,033,298	6,130	1,220,070
1898	.....	63,860	.....	31,880	19,781	3,253,038	8,448	2,471,715
1899	3,217	64,340	1,366	20,490	19,151	3,226,395	10,079	2,670,108
1900	2,480	25,792	780	9,048	16,880	2,226,880	7,482	1,452,780
1901	2,707	62,261	879	16,349	24,429	4,797,433	10,214	2,925,362
1902	2,559	49,900	1,596	34,154	22,005	3,459,325	12,175	3,230,995
1903	4,895	88,182	2,357	41,483	27,198	4,757,000	12,251	3,452,340
1904	6,293	125,860	2,562	51,240	24,471	3,799,569	14,870	3,741,580
1905	6,923	173,075	2,081	53,706	25,835	4,759,646	13,411	3,481,653
1906	4,195	100,680	2,559	67,302	25,043	4,702,595	13,001	3,446,432

Canadian figures are given in Imperial bushels.

PART II.—CHATTEL MORTGAGES.

Table showing by County Municipalities of Ontario the total number and amount of Chattel Mortgages on record and undischarged on December 31st, 1906, against (1) all occupations, (2) farmers; together with totals for the Province for the past ten years.

Counties and Districts.	Chattel Mortgages against all occupations.				Chattel Mortgages against farmers.			
	To secure existing debt.		For future indorsation.		To secure existing debt.		For future indorsation.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amt.
		$		$		$		$
Algoma	*225	806,862	3	30,289	126	29,005	....	.....
Brant	257	157,556	....	.....	93	57,291	....	.....
Bruce	437	224,497	....	.....	277	76,489	....	.....
Carleton	563	662,808	5	3,391	67	29,504	1	141
Dufferin	113	44,707	1	1,200	73	30,881	....	.....
Elgin	482	206,320	....	.....	215	70,149	....	.....
Essex	754	828,718	1	3,000	302	90,618	....	.....
Frontenac	360	236,525	....	.....	254	72,963	....	.....
Grey	617	226,917	....	.....	433	140,342	....	.....
Haldimand	133	53,604	....	.....	90	30,713	....	.....
Haliburton	60	14,328	....	.....	55	8,393	....	.....
Halton	63	70,085	....	.....	22	41,482	....	.....
Hastings	509	282,917	10	90,220	376	99,304	3	748
Huron	241	197,801	1	125	135	68,361	....	.....
Kent	965	301,317	....	.....	775	218,199	....	.....
Lambton	434	408,900	....	.....	332	109,981	....	.....
Lanark	144	67,293	....	.....	70	23,345	....	.....
Leeds	273	116,128	....	.....	176	60,875	....	.....
Lennox and Addington	195	92,675	2	625	117	51,260	1	125
Lincoln	152	126,420	1	205	65	29,626	1	205
Manitoulin	97	46,785	3	5,945	73	25,189	....	.....
Middlesex	383	208,520	....	.....	97	45,093	....	.....
Muskoka	206	199,487	2	20,000	122	22,061	....	.....
Nipissing	†421	1,052,065	....	.....	168	50,354	....	.....
Norfolk	237	73,951	....	.....	174	36,874	....	.....
Northumberland	426	279,621	....	.....	234	122,481	....	.....
Ontario	219	146,917	9	1,888	136	88,565	9	1,888
Oxford	228	206,415	1	600	74	36,124	1	600
Parry Sound	194	††879,194	9	36,697	76	93,412	....	.....
Peel	82	54,545	....	.....	48	30,136	....	.....
Perth	162	106,420	....	.....	83	57,261	....	.....
Peterborough	140	93,277	....	.....	122	65,024	....	.....
Prescott	150	146,602	....	.....	80	25,935	....	.....
Prince Edward	113	119,222	1	60	80	25,959	1	60
Rainy River	73	142,468	....	.....	25	12,880	....	.....
Renfrew	214	115,179	2	3,000	154	66,810	....	.....
Simcoe	564	740,046	....	.....	340	276,635	....	.....
Stormont	272	135,351	17	13,599	175	78,922	8	3,847
Thunder Bay	60	135,419	2	2,700	12	3,354	....	.....
Victoria	180	82,276	....	.....	119	41,721	....	.....
Waterloo	156	160,046	....	.....	51	47,018	....	.....
Welland	§248	1,976,735	9	155,785	77	17,046	....	.....
Wellington	223	140,678	....	.....	88	47,699	....	.....
Wentworth	963	368,733	8	21,376	133	65,587	....	.....
York	1,620	2,514,361	8	25,815	148	60,505	....	.....
The Province:								
1906	14,608	15,250,691	97	416,520	6,943	2,781,426	25	7,614
1905	16,355	17,218,030	96	1,154,328	7,403	2,758,046	29	10,344
1904	15,568	13,656,740	94	472,761	7,100	2,559,195	42	25,034
1903	14,885	14,354,605	187	491,978	7,085	2,548,758	88	19,446
1902	15,684	10,890,615	142	1,099,188	7,193	2,616,538	42	21,387
1901	16,299	10,613,564	247	237,445	7,757	2,854,759	134	30,207
1900	17,321	11,669,806	307	499,184	8,440	3,110,543	121	30,840
1899	18,216	11,067,664	291	324,628	9,392	2,988,853	124	34,798
1898	19,526	12,001,075	283	281,142	10,514	3,547,554	117	32,943

* Including 10 lumbermen for $664,067
† Including 22 lumbermen for $838,269.
†† Including 15 lumbermen for $726,600. The return is for 1905, the return for 1906 not yet received.
§ Including 8 construction companies for $1,810,473.

ANNUAL REPORT

OF THE

BUREAU OF INDUSTRIES

FOR THE

PROVINCE OF ONTARIO

1906

PART III---MUNICIPAL STATISTICS

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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The following statement is compiled from the summarized tables and gives population, total assessment, amount of taxes imposed, the amount of debenture and floating debt, all municipalities of the Province for the twenty-one years, 1886-1906.

Year.	Population.	Total assessment.	Taxes imposed for all purposes, including schools.			† Debenture debt for all purposes.		Floating debt.
			Total.	Rate per head.	Mills on the dollar.	Total.	Rate per head.	
		$	$	$ c.		$	$ c.	$
1906..	2,142,095	1,103,791,685	18,021,428	8 41	16.33	*	*	*
1905..	2,101,260	1,036,910,130	16,589,522	7 90	16.00	73,590,591	35 02	10,671,987
1904..	2,076,970	906,105,659	15,553,950	7 49	17.17	68,195,775	32 83	9,509,932
1903..	2,056,516	888,495,028	14,764,032	7 18	16.62	63,927,539	31 09	8,526,493
1902..	2,037,267	859,943,263	14,146,831	6 94	16.45	61,179,468	30 03	7,760,872
1901..	2,028,889	835,697,607	13,341,355	6 58	15.96	59,496,650	29 32	7,223,781
1900..	2,013,860	822,435,670	12,992,821	6 45	15.80	57,172,802	28 39	7,768,033
1899..	2,010,748	816,765,473	12,535,284	6 23	15.35	56,389,603	28 04	6,302,266
1898..	2,001,350	809,184,833	12,222,966	6 10	15.11	54,506,372	27 11	6,883,735
1897..	1,990,977	803,625,377	12,206,325	6 13	15.19	53,577,475	26 91	6,482,953
1896..	1,972,286	814,917,633	12,122,785	6 15	14.88	52,948,275	26 85	6,261,394
1895..	1,957,390	821,466,166	12,316,429	6 29	14.99	51,895,991	26 51	5,834,129
1894..	1,936,219	826,179,370	12,320,312	6 36	14.91	49,724,587	25 68	6,669,567
1893..	1,910,059	825,530,052	12,512,660	6 56	15.17	48,083,243	25 17	6,796,422
1892..	1,909,527	825,211,127	11,803,570	6 18	14 30	47,166,962	24 70	6,469,899
1891..	1,922,121	818,847,394	11,767,748	6 12	14.37	43,888,853	22 83	7,629,730
1890..	1,917,544	798,616,271	10,897,485	5 68	13.65	40,720,985	21 24	8,387,186
1889..	1,906,901	761,905,816	10,249,198	5 37	13.45	38,988,332	20 41	6,493,519
1888..	1,880,145	748,654 570	9,919,962	5 28	13.25	34,729,527	18 47	6,437,363
1887..	1,848,457	717,311,938	9,300,113	5 03	12.97	31,943,320	17 28	5,645,208
1886..	1,828,495	694,380,659	9,009,385	4 93	12.97	29,924,863	16 37	4,841,717

* Statistics of debts for 1906 are not yet complete.
† The amount accumulated in Sinking Fund on Dec. 31, 1905 was $13,336,823.

FINANCIAL STATEMENT—TOWNSHIP MUNICIPALITIES.

Summary statement showing the totals for all townships in Ontario of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1896-1905.

Schedule.	1905.	1904.	1903.	1902.	1901.	1900.	1899.	1898.	1897.	1896.
RECEIPTS.	$	$	$	$	$	$	$	$	$	$
Balance from the previous year	752,629	727,835	724,152	678,919	574,557	502,223	539,813	541,624	444,150	559,452
Ordinary municipal revenue :										
Municipal and school taxes	5,945,574	5,573,107	5,302,543	4,986,517	4,943,691	4,812,372	4,675,154	4,462,288	4,598,830	4,286,861
Licenses (liquor and other)	38,900	41,271	45,666	42,495	47,532	41,736	41,878	43,019	46,723	47,758
Fees, rents, fines, etc	14,745	14,997	10,995	14,859	14,647	14,265	13,811	12,716	12,423	11,873
Refund of loans, investments and deposits	280,971	272,523	219,361	152,856	121,817	207,790	164,532	505,476	199,050	273,183
Interest and dividends	63,538	61,317	61,927	57,794	55,847	55,170	55,332	75,461	72,385	65,774
Loans :										
Money borrowed for current expenses.	903,751	911,703	699,904	599,391	640,363	542,259	514,505	456,217	450,533	548,495
Money borrowed on debentures for—										
Schools	106,320	118,239	79,673	79,296	86,459	57,886	69,572	69,597	56,673	49,982
Drainage	428,621	355,049	305,589	199,541	251,639	227,323	229,131	261,022	293,924	163,023
Other purposes	108,819	136,504	27,773	73,687	41,448	31,200	59,975	48,438	20,800	49,445
Premiums on debentures sold	7,433	4,031	6,354	5,578	3,841	5,406	6,966	7,690	11,525	4,068
Grants from county for roads, etc	31,088	19,059	18,941	17,916	17,877	16,814	15,337	15,895	22,879	39,467
Miscellaneous	170,846	133,769	148,840	106,372	108,529	79,874	106,081	123,393	78,621	86,486
Total	8,853,235	8,369,404	7,651,718	7,015,221	6,908,247	6,594,318	6,492,087	6,622,836	6,308,516	6,186,167
DISBURSEMENTS.										
Expenses of Municipal Government :										
Allowances, salaries and commissions	350,187	336,022	324,022	316,647	310,618	309,162	300,387	294,313	292,206	287,272
Law costs, including salaries	59,399	55,959	41,000	55,147	58,316	49,098	43,372	43,690	51,865	34,090
Other expenses of municipal gover't	115,512	114,268	110,079	103,441	97,959	99,468	105,323	96,166	93,321	89,827
Construction works :										
Roads and bridges	1,407,537	1,385,688	1,193,778	964,322	962,810	894,104	881,068	772,947	706,091	702,212
Buildings and other works	34,636	61,933	17,805	23,256	18,177	15,844	19,896	15,381	21,891	16,429
Drainage works	579,732	517,172	350,090	219,891	312,305	284,553	327,578	311,311	275,869	238,919
Support of the poor and other charities	53,460	54,157	52,782	55,581	54,953	54,417	55,943	59,871	58,763	58,543
County treasurer for levy	1,147,378	1,006,880	986,269	944,223	937,934	953,191	976,863	910,094	958,975	984,609

Payments on schools and education	2,462,781	2,363,441	2,221,907	2,119,763	2,076,590	1,984,747	1,960,373	1,926,978	1,935,503	1,813,537
Sinking Fund investments and deposits.	38,022	48,877	69,930	92,770	29,842	79,947	69,128	114,112	89,621	118,214
Other investments and special deposits..	221,454	229,695	206,278	78,025	141,171	80,341	72,897	121,068	160,427	161,021
Loans repaid :										
Debentures redeemed (principal)—										
School	69,081	74,118	70,942	67,128	59,378	67,215	63,834	60,969	66,140	65,230
Drainage	241,965	230,195	207,202	221,222	210,673	211,999	196,409	194,044	182,884	219,201
All other	117,839	58,377	58,935	55,268	55,798	99,006	131,549	390,029	72,186	100,693
Interest on loans, advances, debent's..	172,086	152,544	143,125	145,098	139,610	143,441	145,803	177,617	168,620	177,504
Moneys borrowed for current expenses	882,618	757,394	695,111	629,456	585,982	558,236	498,661	430,588	518,518	537,482
Board of Health (including salaries)....	30,975	36,539	62,355	66,330	46,860	24,378	25,391	17,979	17,449	15,298
Miscellaneous.....	124,938	133,516	112,243	133,491	127,352	110,614	115,389	145,866	96,563	121,933
Totals	8,109,630	7,616,775	6,923,883	6,291,069	6,229,328	6,019,761	5,989,864	6,083,023	5,766,892	5,742,017
ASSETS.										
Cash in treasury	743,605	752,629	727,835	724,152	678,919	574,557	502,223	539,813	541,624	441,150
Taxes in arrears.....	1,490,848	1,416,415	1,313,113	1,279,623	1,191,743	1,285,700	1,383,475	1,438,023	1,412,171	1,577,267
Sinking Fund investments and deposits..	242,168	517,936	523,197	385,289	182,381	234,632	233,255	213,767	498,619	452,819
Other investments and special deposits..	*1,047,068	792,485	788,371	881,224	1,080,904	979,676	1,028,667	1,078,088	1,067,449	1,062,530
Land, buildings, and other property....	549,135	524,472	483,497	465,572	438,951	429,001	409,171	414,704	403,904	379,729
Miscellaneous	1,219,319	1,113,839	999,343	1,018,462	1,098,559	918,667	892,919	619,615	615,822	564,968
Totals.....	5,292,443	5,147,776	4,835,356	4,754,322	4,671,457	4,422,233	4,449,710	4,304,010	4,539,589	4,481,463
LIABILITIES.										
County levy	431,779	444,802	388,561	369,977	372,468	380,823	413,738	428,262	438,311	474,425
Local school rates.....	289,962	296,266	301,401	283,875	271,587	278,484	281,551	299,667	292,071	333,291
Debentures outstanding (principal) for—										
Aid to railways	381,163	433,437	433,090	449,291	500,384	509,475	584,608	621,053	984,196	1,015,669
Schools.....	† 585,716	518,285	504,164	495,433	486,026	458,915	468,180	462,438	454,119	463,586
Drainage	†1,804,809	1,617,727	1,492,873	1,392,053	1,414,042	1,370,076	1,355,452	1,322,734	1,253,902	1,142,862
Other purposes	† 380,613	340,380	262,600	279,624	207,412	215,671	208,344	243,473	224,874	241,787
Due Sinking Funds.....	41,820	26,420	34,371	33,879	13,063	15,143	14,515	20,171	20,857	18,480
Loans for current expenses and interest .	455,683	419,511	290,932	291,908	344,173	288,931	303,855	281,720	257,215	331,123
Miscellaneous.....	276,214	254,719	270,433	187,110	189,255	199,947	179,821	208,691	167,768	158,481
Totals.....	1,647,759	4,411,577	3,978,425	3,783,150	3,798,410	3,717,495	3,810,064	3,888,209	4,093,313	4,182,704

* This item includes an increase of $310, owing to an increase of $206 in the market value of Bank stock held by the township of Beckwith, and of $104 in the value of Bank stock held by township of Ramsay, since 1904.

† The net decrease in the aggregate of these debentures, not accounted for by redemptions since 1904, is $2,403, due to omitting $3,021 from debentures of Cambridge township for overstatement of its outstanding road and bridge debentures in 1904; and the following increases for omissions in 1904 :— Brooke township tile debentures, $100; Moore township drain debentures, $326; Townsend township school debentures, $191.

FINANCIAL STATEMENT—VILLAGE AND TOWN MUNICIPALITIES.

Summary showing the totals for all villages and towns in Ontario of the several items of Receipts, Disbursements, Assets and Liabilities for the ten years ending December 31st, 1896-1905.

Schedule.	1905.	1904.	1903.	1902.	1901	1900.	1899.	1898.	1897.	1896.
RECEIPTS.	$	$	$	$	$	$	$	$	$	$
Balance from previous year	297,460	†322,019	323,918	352,747	420,009	395,614	*296,875	282,178	346,544	323,936
Ordinary municipal revenue :										
Municipal and school taxes	3,715,447	3,483,654	3,415,079	3,116,099	2,940,181	2,790,058	2,713,046	2,676,590	2,613,480	2,506,565
Licenses (liquor and other)	145,146	142,672	149,997	143,047	147,999	121,644	135,138	135,868	141,226	143,036
Fees, rents, fines, etc	90,960	86,645	93,132	82,413	80,608	76,228	73,264	68,232	66,566	67,143
Water rates, etc	936,711	789,096	747,221	561,421	437,729	369,947	309,039	249,363	213,562	179,622
Refund of loans and special deposits	367,651	378,728	301,522	234,125	183,535	183,544	215,077	251,245	336,222	177,526
Interest and dividends	108,175	94,924	74,662	71,842	71,725	64,981	63,465	46,480	53,781	46,561
Loans for current expenses	4,103,052	4,121,086	3,272,526	2,920,406	2,975,204	2,824,433	2,197,340	1,976,173	1,919,891	1,847,674
Money borrowed on debentures for—										
Schools	323,420	138,800	12,682	85,572	34,513	57,456	76,533	36,350	56,193	67,843
Other purposes	2,259,715	2,150,165	1,672,946	1,749,779	1,427,691	1,328,361	1,467,892	1,068,507	890,821	832,567
Premiums on debentures sold	24,701	10,901	7,180	10,815	13,426	11,444	47,598	30,945	38,267	41,809
County grants	6,273	4,529	5,641	5,891	5,009	966	2,099	4,391	4,413	10,455
Miscellaneous	152,924	182,984	215,196	135,240	97,213	98,526	84,110	83,045	89,999	55,992
Totals	12,531,635	11,906,203	10,319,702	9,467,397	8,834,845	8,323,202	7,681,476	6,909,367	6,770,965	6,300,729
DISBURSEMENTS.										
Expenses of municipal government :										
Allowances, salaries and commissions	211,325	201,332	189,276	185,737	174,287	160,667	160,094	155,020	157,864	157,142
Street lighting, water supply, fire protection	916,743	884,618	755,034	652,565	557,932	529,027	472,794	408,493	380,258	364,088
Law costs (including salaries)	49,428	51,741	38,053	36,732	38,797	47,541	39,407	43,802	32,913	28,261
Other expenses of government	186,731	148,088	136,366	124,392	126,288	118,541	120,491	109,721	110,649	101,756
Construction works :										
Streets, bridges and parks	953,528	1,051,617	950,521	772,372	731,173	823,539	681,051	486,286	423,961	449,958
Buildings and other property	237,759	172,767	217,707	180,379	118,647	42,344	54,556	90,379	118,383	77,415
Water and electric light works	1,354,289	1,379,504	1,020,095	950,643	768,266	714,761	635,744	477,678	450,502	415,253
Support of the poor and other charities	43,905	46,057	40,603	41,012	43,019	48,597	39,781	42,472	40,736	37,076
Administration of justice, police service	115,075	120,533	113,192	102,051	94,318	90,744	87,103	92,761	89,184	84,261
County treasurer for levy	176,658	156,737	153,092	138,980	135,508	130,107	128,674	133,029	134,530	133,297
Payments for schools and education	1,390,443	1,178,785	1,066,309	983,504	947,832	916,901	925,989	887,015	893,427	891,432

Sinking Fund investments and deposits..	199,185	270,366	255,176	253,418	210,205	159,772	196,065	165,991	279,773	181,913
Other investments and special deposits...	469,413	346,745	371,762	172,932	212,415	206,849	147,006	132,713	73,185	99,183
Debentures redeemed { Schools	57,096	66,713	71,706	55,605	52,210	66,204	72,196	70,144	83,756	102,920
Debentures redeemed { All others	601,220	570,768	451,259	364,639	405,708	416,225	590,315	480,786	569,018	301,487
Interest on loans and debentures	890,689	819,047	788,563	693,373	655,511	608,244	537,546	646,866	546,280	555,101
Money borrowed for current expenses...	4,088,355	3,741,013	2,893,759	2,937,269	2,831,425	2,467,739	2,124,131	1,939,466	1,827,603	1,801,293
Board of Health	38,399	36,591	55,176	58,361	45,740	32,540	19,950	15,566	16,836	13,366
Miscellaneous	241,093	365,718	415,106	439,515	332,817	322,851	252,969	215,525	259,929	158,384
Totals	12,221,334	11,608,743	9,982,755	9,143,479	8,482,098	7,903 193	7,285,862	6,593,743	6.488,787	5,953,586
Assets.										
Cash in treasury	310,301	297,460	336,947	323,918	352,747	420,009	395,614	315,624	282,178	347,143
Taxes in arrears	1,027,427	927,328	838,688	828,860	823,185	794,347	859,246	981,641	1.035,041	1,047,751
Sinking Fund investments and deposits..	‡1,297,992	†1,304,387	1,179,477	1,169,817	1,040,121	882,583	*793,306	896,984	894,319	885,696
Other investments and special deposits..	‡1,546,563	†1,342,388	1,231,040	946,887	875,873	798,615	*729,902	667,113	632,110	666,140
Waterworks and electric light plant	8,471,917	7,953,784	7,151,946	6,199,506	5,582,687	1,946,282	4.389,611	4,028,556	3,614,771	3,272.896
Buildings and other property	4,223,628	4,038,929	3,968,348	3,864,493	3,672 387	3.566,891	3,447,773	3,630,380	3,497,355	3,443,331
Miscellaneous	2,917,736	2,631,896	2,467,922	2,258,908	2,142,670	1,994,032	1,607,056	1,244,728	1,200,654	1,166,096
Totals.	19,795,564	18,496,172	17,174,368	15,592,389	14,489,670	13,402,759	12,222,508	11,765,026	11,255,428	10,829.053
Liabilities.										
County levy	63,969	70,963	55,789	52,257	52,551	56,565	53,227	50,573	53,104	55,087
Local school rates	304,894	287,715	291,471	285,471	254,014	248,371	230,979	254,069	249,920	259,347
Debentures outstanding for { Aid to railways	543,974	579,310	624,302	546,746	537,282	565,038	548,231	570,634	676,211	699,237
Debentures outstanding for { Schools	‡1,341,365	†1,136,741	1,094,245	1,123,269	1,093,302	1,110,999	*1,115,817	1,174,273	1,207.967	1,344.301
Debentures outstanding for { Other purposes	‡17,207,548	†16,106,648	14,769,453	13,626,670	12,250,894	11,202,418	*10,311,019	9,824,183	9,126,722	8,717.621
Due Sinking Funds	79,754	85,116	86,488	137,632	115,869	112,966	100,114	105,156	113,565	138,517
Loans for current expenses and interest..	‡1,977,971	†1,985,263	1,676,128	1,292,552	1,329,534	1,191,039	*811,717	774,462	731,561	658,653
Miscellaneous	292,276	297,419	247,132	245,680	267,598	243,256	232,718	189,081	326,563	268,125
Totals.	21,811,751	20,549,175	18,845.008	17,310,277	15,901,044	14,730,652	13,436.822	12,942,431	12,485,613	12,140,888

*The decrease in these items not otherwise accounted for is due to the former town of Woodstock having been transferred to Summary for Cities in 1899—see notes under Summary of Cities on pages 92 and 97-9

†The decrease in these items not otherwise accounted for is due to the former town of Niagara Falls and the former village of Niagara Falls South having been transferred to the Summary for Cities on pages 92 and 99, as in 1904 they were jointly incorporated as the City of Niagara Falls.

‡The former town of Peterborough having become a city in 1905, the balances of these accounts of the town at Dec. 31, 1904, are transferred to the Summary Table for Cities in this Report. They are: Sinking Funds, $82,361.—Other investments, $28,100;—Debenture liabilities for schools, $61,900, for Other purposes, $595,257; Current loans, $26,772.

FINANCIAL STATEMENT—ONTARIO

Summary Statement showing for all Municipalities in Ontario (including counties, townships, and Liabilities for the ten years

Schedule.		1905.	1904.	1903.
RECEIPTS.		$	$	$
Balance from previous year	*a*	1,783,091	1,736,751	2,016,125
Ordinary municipal revenue:				
Municipal and school taxes	*b*	16,528,555	15,544,148	14,939,761
Licenses (liquor and other)	*a*	367,774	358,243	375,233
Fees, rents, tolls, fines, etc.	*a*	1,010,352	854,759	755,232
Water rates, electric light or gas rates, etc	*c*	2,396,917	2,019,763	1,866,174
Surplus fees from Registrar	*d*	18,572	16,795	17,929
Rates from local municipalities	*d*	1,320,461	1,180,799	1,115,242
Subsidies and refunds:				
Received from Legislature on account of—				
Schools	*d*	142,464	138,341	185,600
Administration of justice	*d*	161,477	168,108	90,283
Refund of loans, investments and special deposits	*a*	2,869,165	5,014,690	2,156,043
Interest and dividends	*a*	628,587	617,958	525,450
Loans:				
Money borrowed for current expenses	*a*	8,871,179	9,072,489	8,241,547
Money borrowed on debentures (face value) for—				
School purposes	*a*	601,999	509,618	230,055
Other purposes	*a*	6,888,250	7,374,796	4,548,817
Non-resident taxes collected	*d*	33,589	28,120	32,525
Towns or cities separated from counties	*d*	64,159	74,557	68,729
Miscellaneous	*a*	1,070,824	1,029,301	887,306
Totals		44,757,415	45,739,236	38,082,051
DISBURSEMENTS.				
Expenses of municipal government:				
Attendance at meetings of council and committees	*d*	48,526	54,358	47,504
Allowances, salaries and commissions	*a*	929,516	873,859	838,869
Lighting of streets, water supply, fire protection	*c*	2,312,618	2,305,688	2,077,426
Law costs (including salaries)	*a*	187,117	202,028	137,526
Other expenses of municipal government	*a*	873,600	607,112	607,458
Construction works:				
Roads, bridges, streets and parks	*a*	5,461,136	5,271,546	4,613,946
Grants to minor municipalities for roads	*d*	80,045	132,130	105,007
Water and electric light works	*c*	2,904,691	2,309,910	1,607,030
Buildings and other works	*a*	903,022	629,052	633,277
Drainage works	*e*	579,732	517,172	350,090
Administration of justice, gaols, police, etc	*f*	1,322,055	1,262,586	1,202,552
Support of the poor and other charities	*a*	511,583	473,614	446,204
County treasurer for levy	*g*	1,324,036	1,163,617	1,139,361
Payments on account of schools and education	*a*	6,211,424	5,526,701	5,188,486
Sinking Fund investments and deposits	*a*	3,023,711	4,245,798	2,329,689
Other investments and special deposits	*a*	1,209,864	1,017,906	1,296,803

MUNICIPALITIES, FOR THE YEAR 1905.

cities, towns, and villages), the total of the several items of Receipts, Disbursements, Assets ending December 31st, 1896-1905.

1902.	1901.	1900.	1899.	1998.	1897.	1896.
$	$	$	$	$	$	$
1,578,195	1,413,467	1,645,145	1,849,739	1,641,559	1,728,747	1,648,455
14,297,780	13,644,383	13,203,140	12,669,127	12,217,687	12,178,312	11,881,641
347,740	356,352	322,151	338,142	331,603	337,530	334,559
728,062	683,629	575,683	533,076	501,409	483,134	514,408
1,688,811	1,444,789	1,349,986	1,401,458	1,289,755	1,242,235	1,187,751
14,520	12,614	16,131	11,716	10,957	13,292	16,951
1,114,766	1,060,743	1,099,357	1,110,356	1,047,924	1,097,689	1,111,043
137,792	144,370	142,954	149,361	147,418	149,606	142,717
140,288	122,330	147,437	144,228	146,726	180,877	169,304
2,186,385	2,257,041	1,444,024	2,695,613	2,451,302	2,232,984	1,790,130
548,181	502,929	514,873	500,273	493,578	451,879	432,287
7,085,441	6,260,577	6,807,547	5,525,298	5,205,349	4,892,579	4,516,049
497,068	173,272	165,842	156,105	338,993	162,866	253,325
3,261,285	4,442,646	3,031,113	4,079,658	4,267,653	3,785,949	4,137,606
34,604	36,861	42,540	55,524	73,120	81,235	71,176
93,019	90,186	89,910	81,535	79,175	97,267	107,562
739,626	677,752	458,722	567,932	677,370	660,422	672,585
34,493,563	33,323,941	31,056,555	31,869,111	30,921,578	29,776,603	28,987,549
42,768	41,407	39,616	44,548	38,934	43,443	72,772
817,406	794,462	773,736	772,441	709,169	717,526	719,371
1,855,821	1,709,301	1,623,999	1,449,992	1,490,253	1,346,008	1,337,712
161,833	165,563	157,984	137,986	149,569	156,287	143,877
482,473	597,345	529,808	503,775	467,339	445,967	451,167
3,823,574	3,564,315	3,741,106	3,325,856	2,657,522	2,654,732	2,090,683
23,657	19,873	23,829	20,620	18,252	26,244	39,621
1,318,909	1,171,264	1,358,820	1,195,405	812,117	824,418	769,365
627,171	368,549	334,133	529,596	713,208	719,966	697,881
219,891	312,305	284,553	327,578	311,311	275,869	238,919
1,143,062	1,157,413	1,081,909	1,072,526	1,066,013	1,066,070	1,054,505
418,343	400,945	405,953	381,554	365,071	363,608	333,423
1,083,203	1,073,442	1,083,298	1,105,537	1,043,123	1,093,505	1,117,906
4,937,354	4,685,150	4,694,876	4,580,777	4,434,194	4,258,034	4,257,033
2,046,632	1,963,474	1,266,082	2,675,969	2,473,950	2,501,517	1,969,668
611,050	757,113	753,507	501,007	436,681	393,364	545,255

FINANCIAL STATEMENT—ONTARIO

Summary Statement showing for all Municipalities in Ontario (including counties, townships, and Liabilities for the ten years

Schedule.		1905.	1904.	1903.
		$	$	$
Loans repaid:				
Debentures redeemed (principal)—				
School	*b*	176,562	185,372	179,700
All other	*a*	1,917,880	3,441,882	1,850,123
Interest on loans, advances and debentures	*a*	3,115,762	2,961,166	2,784,757
Refund of money borrowed for current expenses	*a*	8,759,211	9,435,267	7,677,580
Non-resident taxes paid	*d*	30,889	28,790	46,584
Board of Health (including salaries)	*b*	202,187	201,976	214,381
Miscellaneous	*a*	877,887	1,108,615	970,947
Totals		42,963,057	43,956,145	36,345,300
ASSETS.				
Cash in treasury (exclusive of Sinking Funds)	*a*	1,794,358	1,783,091	1,736,751
Taxes in arrears	*b*	4,102,479	3,943,057	3,829,618
Rates due from local municipalities	*d*	579,976	579,103	527,890
Sinking Fund investments and deposits	*a*	13,336,823	12,516,290	12,099,680
Other investments and special deposits	*a*	4,430,001	3,883,220	4,070,337
Waterworks and electric light plant	*c*	22,752,069	21,106,360	18,981,162
†Other buildings and property	*a*	24,765,171	23,798,114	22,896,172
Miscellaneous	*a*	11,002,097	9,519,195	9,293,238
Totals		82,762,974	77,128,430	73,434,848
LIABILITIES.				
County levy	*g*	495,748	515,765	444,350
School rates and grants unpaid	*a*	611,098	597,570	609,447
Debentures outstanding (principal) for—				
Aid to railways	*a*	3,712,231	3,674,259	3,733,760
Schools	*b*	5,327,622	4,901,793	4,577,471
All other purposes	*a*	64,550,738	59,619,723	55,616,308
Loans for current expenses and interest due on same	*a*	4,917,791	4,820,258	5,178,828
Local municipalities for non-resident taxes	*d*	8,567	5,867	6,537
Miscellaneous	*a*	4,638,783	3,570,472	2,287,331
Totals		84,262,578	77,705,707	72,454,032

† Exclusive of school property. (*a*) All municipalities; (*b*) townships, cities, towns and villages; (*c*) cities, towns and villages; (*d*) counties; (*e*) townships; (*f*) counties, cities, towns and villages; (*g*) townships, towns and villages.

MUNICIPALITIES, FOR THE YEAR 1905.—*Concluded.*

cities, towns, and villages), the total of the several items of Receipts, Disbursements, Assets ending December 31st, 1896-1905.

1902.	1901.	1900	1899.	1898.	1897.	1896.
$	$	$	$	$	$	$
208,271	166,868	181,157	163,722	216,858	183,014	215,934
1,873,592	2,123,937	2,231,993	2,188,816	3,463,746	3,131,278	3,129,832
2,762,612	2,709,953	2,652,749	2,508,955	2,633,762	2,553,988	2,588,759
6,596,080	6,660,448	5,429,438	6,057,300	4,689,474	4,301,229	4,411,493
34,835	40,847	42,272	70,386	66,343	83,313	75,288
238,717	198,002	128,250	118,111	100,750	102,430	92,312
1,120,184	1,063,770	821,020	691,539	714,200	893,234	906,026
32,447,438	31,745,746	29,643,088	30,223,996	29,071,839	28,135,044	27,258,802
2,046,125	1,578,195	1,413,467	1,645,145	1,849,739	1,641,559	1,728,747
3,916,407	4,159,807	4,252,611	4,329,972	4,614,387	4,652,431	4,617,196
482,437	610,246	489,635	533,868	531,222	550,055	587,538
11,044,846	10,442,683	10,104,879	9,821,918	9,395,774	8,994,790	8,350,555
3,698,117	3,835,209	3,741,275	3,593,175	3,557,079	3,542,472	3,604,475
17,804,397	16,995,522	16,203,624	15,312,773	16,085,883	14,137,268	13,720,675
22,674,469	22,139,669	21,986,563	21,600,123	19,974,122	20,912,711	20,736,435
8,232,626	7,472,707	7,004,484	6,584,596	5,918,589	5,745,594	5,901,072
69,899,424	67,234,038	65,196,538	63,421,570	61,926,795	60,176,880	59,246,691
422,234	425,019	437,388	166,965	478,835	491,415	529,512
590,801	541,491	565,055	536,240	589,389	562,262	621,842
3,697,804	3,740,675	3,689,546	3,837,041	3,944,744	4,523,719	4,616,120
4,527,116	4,241,070	4,169,382	4,180,673	4,194,554	4,072,628	4,201,547
52,954,548	51,514,905	49,313,874	48,371,889	46,367,074	44,981,128	44,130,608
4,670,123	4,190,162	4,602,864	3,191,709	3,720,632	3,219,853	2,682,520
20,192	7,308	11,295	11,027	25,889	19,112	21,540
2,057,522	2,059,801	2,151,431	2,096,325	2,068,990	2,190,311	2,405,980
68,940,340	66,720,431	64,940,835	62,691,869	61,390,107	60,060,428	59,209,669

ASSESSMENT AND TAXATION.

Summary statement for the Province of Ontario, of the Population, as shown by the assessment rolls, and of the assessed values and amount of Taxes imposed, as shown by the collection rolls, together with the average rate of taxes per head of population assessed as resident, and rate in mills on the dollar of total assessed value for the fifteen years, 1892 to 1906, classified as *rural* (townships) *urban* (towns and incorporated villages) and *cities*.

Municipalities.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real Property.	Business assessment	Taxable income.	Total.	Total.	Per head	Mills on $.
1906.		$	$	$	$	$	$ c.	
Rural	1,051,837	582,333,880	4,945,772	1,398,716	588,678,368	6,399,282	6 08	10.9
Urban.....	508,093	161,153,708	18,554,393	4,886,522	184,594,623	4,146,982	8 16	22.5
Cities	582,165	280,289,349	36,087,023	14,142,322	330,518,694	7,475,164	12 84	22.6
Total.....	2,142,095	1,023,776,937	59,587,188	20,427,560	1,103,791,685	18,021,428	8 41	16.3
1905.								
Rural	1,061,018	566,268,453	4,560,446	1,049,661	571,878,560	5,981,125	5 64	10.5
Urban.....	482,254	149,916,546	15,650,684	3,861,967	169,429,197	3,777,270	7 83	22.3
Cities	557,988	262,064,326	25,811,447	7,726,600	295,602,373	6,831,127	12 24	23.1
Total... .	2,101,260	978,249,325	46,022,577	12,638,228	1,036,910,130	16,589,522	7 90	16.0
1904.								
Rural	1,068,407	477,691,722	2,384,695	262,315	480,338,732	5,630,992	5 27	11.7
Urban.....	485,727	135,581,967	11,187,390	1,678,239	148,447,596	3,558,107	7 33	24.0
Cities	522,836	246,415,960	23,799,514	7,103,857	277,319,331	6,364,851	12 17	23.0
Total.....	2,076,970	859,689,649	37,371,599	9,044,411	906,105,659	15,553,950	7 49	17.2
1903.								
Rural	1,078,103	475,725,803	2,274,791	306,153	478,306,747	5,338,377	4 95	11 2
Urban.....	479,355	132,260,086	10,161,055	1,840,636	144,261,777	3,377,074	7 05	23.4
Cities	499,058	237,599,527	19,994,418	8,332,559	265,926,504	6,048,581	12 12	22.7
Total.....	2,056,516	845,585,416	32,430,264	10,479,348	888,495,028	14,764,032	7 18	16.6
1902.								
Rural	1,084,589	463,891,483	2,198,598	274,014	466,364,095	5,044,840	4 65	10.8
Urban.....	466,226	124,424,635	9,885,217	1,835,279	136,145,131	3,124,082	6 70	22.9
Cities	486,452	229,563,184	19,892,087	7,978,766	257,434,037	5,977,909	12 29	23.2
Total.....	2,037,267	817,879,302	31,975,902	10,088,059	859,943,263	14,146,831	6 94	16.5
1901.								
Rural	1,092,181	456,406,064	2,161,826	244,036	458,811,926	4,862,630	4 45	10.6
Urban.....	457,248	118,650,228	9,379,986	1,741,096	129,771,310	2,920,489	6 39	22.5
Cities	479,460	221,342,063	18,252,096	7,520,212	247,114,371	5,558,236	11 59	22.5
Total.....	2,028,889	796,398,355	29,793,908	9,505,344	835,697,607	13,341,355	6 58	16.0
1900.								
Rural	1,095,222	451,535,483	2,422,994	228,576	454,187,053	4,696,255	4 29	10.3
Urban.....	450,678	115,345,617	8,825,858	1,727,481	125,898,956	2,744,988	6 09	21.8
Cities	467,960	218,659,680	16,707,100	6,982,881	242,349,661	5,551,578	11 86	22.9
Total.....	2,013,860	785,540,780	27,955,952	8,938,938	822,435,670	12,992,821	6 45	15.8

Previous to 1900 the city of Woodstock is included with towns (urban).

Previous to 1904 the city of Niagara Falls was represented as the town of Niagara Falls and village of Niagara Falls South, and included in urban total.

Previous to 1905 the city of Peterborough is included with towns (urban).

1905 is the first year for business assessment. The figures in previous years are for personal property.

ASSESSMENT AND TAXATION. *Continued.*

Municipalities.	Population.	Assessed values.				Taxes imposed for all purposes.		
		Real property.	Business assessment	Taxable income.	Total.	Total.	Per head	Mills on $.
1899.								
Rural	1,109,806	447,964,611	2,779,272	209,065	450,952,948	4,621,803	4 16	10.2
Urban	452,066	115,700,762	8,532,635	1,748,758	125,982,155	2,691,534	5 95	21.4
Cities	448,876	214,442,167	18,075,255	7,307 948	239,825,370	5,221,947	11 63	21.8
Total	2,010,718	778,107,540	29,387,162	9,265,771	816,760,473	12,535,284	6 23	15.3
1898.								
Rural	1,110,894	415,877,275	2,696,084	236,701	448,810,060	4,461,474	4 02	9.9
Urban	449,567	114,171,098	8,324,671	1,801,628	121 297,397	2,666,703	5 93	21.5
Cities	440,889	211,334,978	16,547,241	8,195,157	236,077,376	5,094,789	11 56	21.6
Total	2,001,350	771,383,351	27,567,996	10.233,486	809,184,833	12,222,966	6 11	15.1
1897.								
Rural	1,113.530	441,878.264	2,609,661	234,553	444,722,478	4,407,005	3 96	9.9
Urban	446,507	111,844,869	8,246,991	1,844,393	121,936.253	2,639,328	5 91	21.6
Cities	430,940	212,621,741	17,125,503	7,219,402	236,966,616	5,160,592	11 98	21.8
Total	1,990,977	766,344,874	27,982,155	9,298,348	803,625.377	12,206,925	6.13	15.2
1896.								
Rural	1,112,900	444,056,842	2,792,097	268,444	447,117,383	4,292,741	3 86	9.6
Urban	438,452	111,050.720	8,338,270	1.886,057	121,275.017	2,562,135	5 84	21.1
Cities	420,934	221,941,541	16,963,651	7.620,011	246,525,203	5,267,909	12 51	21.4
Total	1,972,286	777,049,103	28,094,018	9,774,512	814,917,633	12,122.785	6 15	14.9
1895.								
Rural	1,109,631	445,375,439	2,762,179	279,641	448,417,259	4,473,269	4 03	10 0
Urban	431,544	112,537,613	8,848,376	1,971,856	123,357,845	2,565,566	5 95	10.8
Cities	416,215	225,079,539	16,852,113	7,759,410	249,691,062	5,277.594	12 68	21.1
Total	1,957,390	782,992.591	28,462,668	10,010,907	821,166,166	12.316,429	6 29	15.0
1894.								
Rural	1,103,828	448,216,984	2.899,503	359,616	451,476,103	4,579,044	4 15	10.1
Urban	123,581	111,163,611	9,046,410	1,863,372	122,073,393	2,482,793	5 86	20.3
Cities	108,810	227,578,882	17,323,301	7,727,691	252,629,874	5,258,475	12 86	20.8
Total	1,936,219	786,959,477	29,269,214	9,950,679	826,179,370	12,320.312	6 36	14.9
1893.								
Rural	1,096,984	448,311,559	2,957,944	359,600	451,629,103	4,629,028	4.22	10.3
Urban	415,410	111,724,238	8,923,403	2,029,029	122,676,670	2,449,452	5 90	20.0
Cities	397,665	226,179,831	17,581,320	7,463,128	251,224,279	5,444,180	13 69	21.7
Total	1,910,059	786,215,628	29,462,667	9,851,757	825,530,052	12,522,660	6 56	15.2
1892.								
Rural	1,102,467	448,566,182	3,089,202	410,274	452,065,658	4,599,442	4 17	10.2
Urban	413,396	110,989,898	8,452,309	2,469,164	121,911,371	2,375,995	5 75	19.5
Cities	393,664	222,997,515	18,928,105	9,308,478	251,234,098	4,828,133	12 26	19.2
Total	1,909,527	782,553,595	30,469,616	12,187,916	825,211,127	11,803,570	6 18	14.3

ELECTRIC AND OTHER STREET LIGHTING PLANTS, OWNED AND OPERATED BY MUNICIPALITIES IN 1905.

The following cities of Ontario owned and operated Gas or Electric Light Plants in 1905, aggregating in value, $1,144,163 :

	Value.		Value.
Belleville	$88,687	Ottawa	$200,000
Chatham	18,500	†St. Thomas	232,596
Guelph	214,230	Windsor	27,000
Kingston	214,630	Woodstock	64,840
Niagara Falls	83,680		

In 1904-5 St. Thomas operated its Street Railway and issued debentures for the improvement and extension of the plant to the amount of $65,000.

The cities of Guelph, Stratford and Hamilton had Sewage Disposal Systems in the year 1905, valued in the first at $42,567, in the second at $50,000, and in the 3rd at $823,904.

The following villages and towns in the Province of Ontario, owned and operated Gas or Electric Light Plants in the year 1905, having an aggregate value of $2,273,146 :

	Value.		Value.
Acton	$9,200	Morrisburg	$31,000
Alexandria	13,000	Mount Forest	13,000
Almonte	38,000	Napanee	5,600
Amherstburg	3,500	Newmarket	24,000
Aylmer	27,000	Niagara	17,500
Barrie	45,900	North Toronto	9,000
Beeton	6,000	†Orillia	361,000
Berlin	235,000	Owen Sound	115,098
Blenheim	10,000	Palmerston	9,500
Bothwell	6,200	Paris	46,756
Bracebridge	45,000	Parry Sound	41,038
Brockville	136,402	Perth	12,400
Campbellford	18,500	Picton	22,000
Collingwood	48,995	‡Port Arthur	223,507
Dresden	10,000	Port Colborne	725
Dundalk	6,500	Port Perry	6,147
East Toronto	13,894	Prescott	18,000
Fort Frances	350	Preston	29,723
*Fort William	133,000	St. Marys	18,000
Goderich	35,692	Springfield	75
Gravenhurst	26,401	Strathroy	19,250
Hagersville	684	Sudbury	32,000
Hespeler	12,656	Thamesville	6,500
Huntsville	19,302	Thessalon	10,600
Iroquois	10,000	Thorold	25,000
Kenora (Rat Portage)	59,520	Tilbury	1,000
Kincardine	16,440	Toronto Junction	14,000
Kingsville (Natural Gas)	1,275	Tottenham	6,000
Leamington (Natural Gas)	15,000	Trenton	9,000
Madoc	9,000	Waterloo (Gas)	15,800
Markham	4,100	Weston	7,000
Midland	36,000	Whitby	22,477
Milton	4,845	Wingham	27,730
Milverton (Acetylene Gas)	200	Woodbridge	45
Mitchell	15,000	Wroxeter	119

*Including $33,000, for Telephone system.

†Including Electric Power plant.

‡Including Electric Railway and Telephone plants.

STATISTICS

OF

ONTARIO MUNICIPALITIES

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
1. Adelaide, Middlesex	6,863	16,146	57	2	38	.....	2,400
2. Adjala, Simcoe	1,618	11,471	53	.....	.....	.....	3,754
3. Admaston, Renfrew	1,655	6,533	24	2	.....	.....	.....
4. Adolphustown, Lennox & Add	1	3,477	....	.....	120	.....	400
5. Albemarle, Bruce	931	5,345	31	.....	.....	.....	1,500
6. Alberton, Rainy River	160	1,812	....	.....	.....	.....	300
7. Albion, Peel	319	14,565	80	.....	.....	.....	5,124
8. Aldborough, Elgin	8,811	31,859	172	29	96	.....	20,035
9. Alfred, Prescott	48	9,499	192	33	.....	.....	200
10. Algona, S. Renfrew	261	1,363	....	.....	.....	.....	.....
11. Alice and Fraser, Renfrew	500	3,422	....	4	.....	.....	.....
12. Alnwick, Northumberland	301	4,092	66	32	.....	.....	600
13. Amabel, Bruce	2,900	12,365	76	8	31	.....	.....
14. Amaranth, Dufferin	80	15,649	....	.....	.....	.....	1,000
15. Ameliasburg, Prince Edward	58	13,880	30	1	1,264	20	1,200
16. Amherst Island, Lennox & Add	309	3,845	30	.....	.....	.....	.....
17. Ancaster, Wentworth	2,707	21,202	80	61	1,330	4,009	.....
18. Anderdon, Essex	.....	12,289	114	.....	89	.....	1,896
19. Anson and Hindon, Haliburton	18	1,157	27	.....	.....	.....	2
20. Armour, Parry Sound	1,326	2,770	2	11	35	.....	.....
21. Arran, Bruce	3,062	13,864	22	6	77	.....	.....
22. Artemesia, Grey	1,908	17,226	204	13	166	.....	3,000
23. Arthur, Wellington	205	15,264	36	10	14	.....	2,750
24. Ashfield, Huron	227	15,063	139	5	.....	.....	1,300
25. Asphodel, Peterborough	125	9,351	....	7	48	.....	1,750
26. Assiginack, Manitoulin	1,023	4,051	73	41	.....	.....	500
27. Athol, Prince Edward	301	4,941	....	26	61	.....	170
28. Atwood, Rainy River	8	984	.....	.....	.....	.....	3,463
29. Augusta, Grenville	1,594	18,666	37	987	943	36	1,500
30. Bagot and Blithefield, Renfrew	925	3,899	106	34	.....	.....	.....
31. Balfour, Algoma	152	2,449	161	9	22	.....	1,650
32. Bangor, W., & McClure, Hastings	193	2,275	20	.....	.....	.....	.....
33. Barrie, Frontenac	201	1,321	24	10	.....	.....	.....
34. Barton, Wentworth	3,878	14,307	130	323	1,005	3,022	.....
35. Bastard and Burgess, S. Leeds	1,164	12,525	141	46	599	23,000	971
36. Bathurst, Lanark	1,975	9,235	....	1	36	.....	.....
37. Bayham, Elgin	7,235	22,707	140	8	85	.....	15,500
38. Beckwith, Lanark	462	7,610	27	.....	380	.....	.....
39. Bedford, Frontenac	433	7,757	24	8	.....	.....	510
40. Belmont & Methuen, Peterborough	.....	8,495	....	.....	.....	.....	.....
41. Bentinck, Grey	1,397	12,625	52	14	34	.....	118
42. Bertie, Welland	.....	20,417	402	15	175	.....	.....
43. Beverly, Wentworth	.....	18,812	63	2	606	4,689	4,691
44. Bexley, Victoria	40	5,106	8	4	148	525	.....
45. Biddulph, Middlesex	4,466	12,621	165	.....	16	600	2,500
46. Billings, Manitoulin	166	1,503	24	7	.....	.....	.....
47. Binbrook, Wentworth	914	8,375	....	.....	.....	.....	.....
48. Blandford, Oxford	2,139	9,023	38	170	74	.....	.....
49. Blanshard, Perth	4,449	18,086	....	4	5	.....	3,975
50. Bleinheim, Oxford	892	24,346	213	691	12	.....	3,000
51. Blind River, Algoma	921	5,845	481	480	.....	.....	1,900
52. Bonfield, Nipissing	590	4,056	198	15	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	35	18	25,559	870	5	254	4,541	....	1
1,000	.....	.....	.....	....	43	17,939	711	.....	198	3,994	....	2
.....	.....	.....	.....	....	84	8,298	428	2	139	1,582	210	3
.....	.....	.....	.....	....	.....	3,998	179	15	44	302	188	4
.....	.....	.....	.....	....	27	7,834	831	38	194	1,378	24	5
700	.....	.....	.....	....	.....	2,972	240	2	35	600	....	6
.....	.....	.....	.....	....	137	20,225	770	742	188	3,965	....	7
.....	3,751	.....	.....	....	384	65,137	1,248	1,017	618	11,558	....	8
.....	.....	.....	.....	....	18	9,990	477	12	122	1,892	70	9
.....	.....	.....	.....	....	.....	1,624	301	.....	26	23	....	10
.....	.....	.....	.....	....	10	3,936	324	3	120	298	....	11
.....	.....	.....	.....	10	51	5,152	390	.....	141	468	729	12
.....	.....	551	.....	200	131	16,262	773	7	140	1,744	40	13
.....	2,503	.....	.....	....	88	19,320	573	3	188	1,926	....	14
.....	.....	.....	.....	....	31	16,484	709	.....	265	814	904	15
.....	.....	.....	.....	....	.....	4,184	176	.....	47	177	....	16
.....	.....	.....	.....	....	.....	29,389	1,206	39	500	4,052	....	17
.....	4,797	.....	.....	200	*2,172	21,557	833	461	416	1,600	....	18
.....	.....	.....	.....	....	4	1,208	159	.....	51	44	....	19
.....	.....	.....	.....	....	268	4,412	398	10	108	339	....	20
.....	.....	.....	.....	....	146	17,177	732	.....	171	6,500	....	21
4,100	.....	.....	.....	....	1,129	27,746	890	15	401	3,931	....	22
1,500	.....	.....	49	....	485	20,313	904	17	159	3,722	....	23
.....	.....	.....	.....	....	63	16,797	873	64	279	3,271	....	24
.....	.....	.....	.....	....	.....	11,281	453	.....	140	2,629	....	25
.....	.....	.....	.....	....	750	6,438	334	.....	147	1,680	....	26
.....	.....	.....	.....	....	.....	5,499	209	.....	93	436	....	27
.....	.....	.....	.....	....	.....	4,455	451	9	54	2,907	....	28
.....	.....	.....	.....	....	.....	23,763	1,077	53	418	3,234	....	29
.....	.....	.....	.....	....	1,018	5,982	358	.....	129	294	....	30
.....	.....	.....	.....	....	640	5,083	362	.....	186	651	350	31
1,330	.....	.....	.....	320	.....	4,138	363	.....	33	369	...	32
.....	.....	.....	.....	....	17	1,573	166	.....	109	45	....	33
.....	.....	.....	.....	....	.....	22,665	1,357	110	525	3,512	....	34
.....	.....	.....	.....	....	115	38,561	708	.....	434	3,270	812	35
.....	.....	.....	.....	....	1	11,248	476	79	223	500	....	36
.....	.....	.....	.....	....	430	46,105	1,097	35	471	6,007	....	37
.....	.....	.....	.....	....	67	8,546	475	.....	119	1,217	....	38
.....	.....	.....	.....	....	10	8,742	384	.....	66	381	....	39
.....	.....	.....	.....	....	293	8,788	587	60	140	679	324	40
.....	.....	.....	.....	....	407	14,647	559	99	165	4,197	....	41
.....	2,918	.....	30	....	†2,101	26,058	758	2	363	8,472	....	42
.....	.....	.....	.....	....	2	28,865	1,179	1	406	3,532	....	43
.....	.....	.....	.....	....	379	6,210	336	15	94	365	....	44
.....	.....	.....	.....	....	164	20,532	742	63	171	4,547	....	45
.....	.....	.....	.....	....	.....	1,700	200	2	44	235	...	46
.....	.....	.....	.....	....	24	9,313	486	30	133	946	....	47
.....	3,193	.....	.....	413	286	16,336	615	18	203	3,096	....	48
.....	.....	.....	.....	374	272	27,165	971	55	206	6,210	....	49
.....	.....	.....	.....	....	1,405	30,559	1,240	24	408	7,391	....	50
.....	.....	.....	.....	....	23	9,650	924	174	593	1,519	...	51
1,100	.....	.....	.....	....	11	5,970	603	17	75	330	....	52

* Including $2,167 share of drainage debt from other municipalities.
† Including $1,735 share of school debentures from Bridgeburg.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1905.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
1. Adelaide	51	.....	4,808	4,569	307	.....	.....
2. Adjala	5	76	2,848	4,922	.....	.....	.....
3. Admaston	6	28	1,087	3,851	.....	.....	.....
4. Adolphustown	.....	191	1,197	1,392	.....	.....	.....
5. Albemarle	16	66	431	3,008	.....	153	.....
6. Alberton	.....	5	.....	1,378	.....	.....	.....
7. Albion	31	46	3,044	6,162	.....	.....	.....
8. Aldborough	111	108	5,569	9,663	4,400	2,900	.....
9. Alfred	75	35	1,135	4,730	.....	.....	.....
10. Algona	37	.....	200	860	.....	.....	.....
11. Alice and Fraser	.....	61	797	2,202	.....	.....	.....
12. Alnwick	22	109	728	1,699	.....	.....	.....
13. Amabel	86	49	1,364	5,584	.....	.....	.....
14. Amaranth	42	11	3,225	9,424	1,594	.....	.....
15. Ameliasburg	43	531	2,511	6,072	.....	1,210	.....
16. Amherst Island	.....	222	.....	2,288	.....	.....	.....
17. Ancaster	434	393	7,506	7,862	.....	.....	4,383
18. Anderdon	58	268	1,437	4,779	5,582	.....	.....
19. Anson and Hindon	.....	.....	97	607	.....	.....	.....
20. Armour	.....	10	.....	2,189	.....	.....	.....
21. Arran	75	.....	2,637	5,455	.....	.....	.....
22. Artemesia	22	49	2,329	12,697	.....	1,114	.....
23. Arthur	31	5	3,000	7,678	99	.....	.....
24. Ashfield	39	10	2,665	6,760	.....	.....	.....
25. Asphodel	16	7	2,342	3,683	.....	.....	.....
26. Assiginack	.....	32	.....	2,594	.....	.....	.....
27. Athol	.....	306	1,072	2,892	.....	.....	61
28. Atwood	.....	.....	.....	50	.....	.....	.....
29. Augusta	60	20	6,732	8,559	.....	175	.....
30. Bagot and Blithefield	5	37	293	2,304	.....	.....	.....
31. Balfour	.....	51	.....	1,942	.....	.....	.....
32. Bangor, Wicklow and McClure	130	10	228	2,714	.....	.....	.....
33. Barrie	2	15	331	801	.....	.....	.....
34. Barton	164	206	3,835	4,861	.....	.....	3,112
35. Bastard and Burgess	23	34	2,360	6,547	.....	172	.....
36. Bathurst	26	10	2,864	4,506	1,243	.....	.....
37. Bayham	139	126	3,441	8,814	27	.....	.....
38. Beckwith	12	5	2,148	3,587	.....	.....	.....
39. Bedford	50	13	3,315	3,650	.....	.....	.....
40. Belmont and Methuen	72	180	875	4,683	.....	.....	.....
41. Bentinck	30	100	2,665	6,031	.....	.....	.....
42. Bertie	114	61	3,739	6,274	959	.....	.....
43. Beverly	63	366	8,665	7,673	.....	.....	4,700
44. Bexley	48	5	307	3,549	.....	583	.....
45. Biddulph	35	180	2,557	4,438	.....	.....	600
46. Billings	.....	5	.....	962	.....	.....	.....
47. Binbrook	32	5	2,944	2,829	.....	.....	.....
48. Blandford	30	155	1,949	2,837	4,227	.....	.....
49. Blanshard	64	117	3,937	5,597	121	.....	.....
50. Blenheim	52	126	4,988	10,246	224	.....	.....
51. Blind River	71	115	.....	1,903	.....	263	.....
52. Bonfield	209	70	.....	3,805	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets on December 31, 1905.			No.
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	2,400	59	.....	87	17,951	7,608	94	.....	1
.....	.....	.....	3,725	119	30	47	16,675	1,264	1,755	.....	2
.....	.....	.....	.....	.....	.....	48	7,381	917	2,747	.....	3
.....	.....	.....	400	14	.....	15	3,937	61	54	.....	4
.....	.....	.....	500	62	.....	394	7,095	739	2,710	308	5
.....	.....	.....	300	8	6	6	2,580	392	633	.....	6
114	.....	.....	4,950	213	.....	.....	20,225	.....	.....	.....	7
.....	2,265	.....	9,462	2,247	.....	468	51,634	13,503	8,124	12,470	8
.....	.....	.....	1,200	76	.....	87	9,911	79	5,617	.....	9
44	.....	.....	.....	16	.....	10	1,517	107	416	.....	10
.....	.....	.....	.....	.....	.....	7	3,812	124	1,292	.....	11
.....	.....	.....	600	12	.....	20	4,918	234	62	.....	12
292	.....	936	.....	856	.....	265	12,136	4,126	973	.....	13
100	425	.....	1,000	40	.....	41	18,592	728	1,590	.....	14
100	.....	.....	2,238	837	.....	99	16,333	151	1,089	12,532	15
.....	.....	.....	350	36	.....	37	3,333	851	1,450	.....	16
.....	.....	.....	.....	.....	.....	1,141	27,516	1,873	4,377	.....	17
.....	818	585	3,885	559	.....	276	21,557	.....	9,744	.....	18
22	.....	.....	2	4	.....	.....	986	222	739	.....	19
.....	.....	.....	.....	.....	.....	27	3,031	1,331	2,136	.....	20
211	.....	.....	.....	113	.....	413	16,307	870	.....	.....	21
.....	.....	.....	3,000	546	.....	110	25,104	2,642	260	6,350	22
600	77	.....	2,750	162	.....	362	19,566	747	.....	.....	23
534	.....	.....	1,300	54	.....	167	16,016	781	5,583	.....	24
.....	.....	.....	1,950	47	.....	1	11,268	13	333	.....	25
.....	.....	.....	500	3	.....	88	5,378	1,060	68	.....	26
.....	.....	.....	170	3	.....	8	5,250	249	8	.....	27
.....	.....	.....	500	151	.....	170	4,292	163	1,127	.....	28
.....	.....	.....	150	241	.....	84	20,803	2,960	2,340	1,370	29
.....	.....	.....	1,500	90	.....	45	5,055	927	730	.....	30
.....	.....	.....	1,000	21	.....	459	5,022	61	2,628	.....	31
74	.....	.....	.....	50	.....	29	4,000	138	3,151	.....	32
.....	.....	66	.....	5	.....	3	1,543	30	405	.....	33
1,000	.....	.....	.....	140	.....	67	18,889	3,776	.....	.....	34
.....	.....	23,000	.....	1,169	.....	32	38,561	.....	21	.....	35
.....	.....	.....	.....	.....	.....	62	9,989	1,259	168	.....	36
100	268	1,643	16,000	1,550	.....	420	40,138	5,967	4,921	.....	37
.....	.....	.....	.....	.....	.....	8	7,571	975	521	.....	38
158	.....	357	150	100	.....	95	8,719	23	853	.....	39
237	.....	.....	.....	128	.....	265	8,230	558	2,742	.....	40
94	.....	.....	118	70	.....	38	14,166	481	3,081	.....	41
750	221	.....	1,228	304	.....	342	23,587	2,471	2,733	.....	42
.....	.....	.....	2,035	.....	.....	245	28,865	.....	6,706	.....	43
500	.....	.....	.....	375	.....	.....	6,177	33	1,669	4,601	44
180	.....	1,000	2,500	97	.....	35	17,145	3,387	2	.....	45
.....	.....	.....	.....	.....	.....	32	1,480	220	936	.....	46
128	.....	.....	.....	28	.....	71	7,632	1,681	107	.....	47
.....	868	.....	.....	220	76	72	14,366	1,970	218	.....	48
111	.....	.....	3,750	144	.....	94	21,377	5,788	146	.....	49
535	360	.....	3,000	413	.....	129	29,136	1,425	26	.....	50
.....	.....	.....	1,389	849	.....	1,319	9,119	531	949	1,046	52
.....	.....	.....	.....	.....	.....	16	5,125	845	3,431	.....	51

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
1. Adelaide	.....	1,500	115	9,317
2. Adjala	.....	.....	.....	3,019
3. Admaston	.....	1,100	.....	4,764
4. Adolphustown	3,000	400	.....	3,515
5. Albemarle	.....	2,783	567	7,107
6. Alberton	.....	.....	700	1,725
7. Albion	.....	900	2,374	3,274
8. Aldborough	.....	2,750	15,671	52,518
9. Alfred	.....	2,500	100	8,296
10. Algona S	.....	350	221	1,094
11. Alice and Fraser	.....	.....	30	1,446
12. Alnwick	25	1,300	.....	1,621
13. Amabel	.....	391	1,287	6,777
14. Amaranth	.....	1,000	262	3,580
15. Ameliasburg	25,812	5,720	300	45,604
16. Amherst Island	.....	225	.....	2,526
17. Ancaster	26,383	4,400	85	37,118
18. Anderdon	.....	1,100	249	11,093
19. Anson and Hindon	.....	.....	103	1,064
20. Armour	.....	285	49	3,801
21. Arran	.....	800	2,072	3,742
22. Artemesia	.....	810	6,150	16,212
23. Arthur	.....	1,200	1,608	3,555
24. Ashfield	.....	325	.....	6,689
25. Asphodel	.....	1,700	.....	2,046
26. Assiginack	.....	650	.....	1,778
27. Athol	1,381	1,245	.....	2,883
28. Atwood	.....	.....	3,414	4,704
29. Augusta	16,868	2,500	.....	26,038
30. Bagot and Blithefield	.....	1,000	.....	2,657
31. Balfour	.....	1,735	130	4,554
32. Bangor, Wicklow and McClure	.....	200	2,088	5,577
33. Barrie	.....	300	.....	735
34. Barton	15,972	2,260	3,000	25,008
35. Bastard and Burgess	12,050	2,000	.....	14,071
36. Bathurst	.....	750	1,099	3,276
37. Bayham	.....	1,200	451	12,539
38. Beckwith	8,460	1,340	.....	11,296
39. Bedford	.....	500	35	1,411
40. Belmont and Methuen	.....	400	2,542	6,242
41. Bentinck	.....	.....	1,239	4,801
42. Bertie	.....	5,230	1,607	12,041
43. Beverly	14,000	3,500	.....	24,206
44. Bexley	.....	250	547	7,100
45. Biddulph	.....	1,300	16	4,705
46. Billings	.....	250	.....	1,406
47. Binbrook	.....	450	424	2,662
48. Blandford	.....	240	.....	2,428
49. Blanshard	.....	800	2,029	8,763
50. Blenheim	.....	1,175	4,852	7,476
51. Blind River	.....	1,550	4,168	8,184
52. Bonfield	.....	.....	1,100	5,376

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.										No.
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	
$	$	$	$	$	$	$	$	$	$	
5,158	.....	.....	.....	.....	.....	.....	.....	.....	5,158	1
3,234	.....	.....	1,000	.....	.....	29	.....	95	4,358	2
1,417	196	.....	.....	.....	.....	.....	.....	125	1,738	3
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
154	1,332	.....	875	.....	.....	1,000	.....	215	3,576	5
.....	.....	.....	700	.....	.....	.....	.....	35	735	6
.....	.....	.....	2,374	.....	.....	174	.....	115	2,663	7
5,012	.....	7,000	19,800	15,870	.....	20,397	3,640	6,586	78,305	8
1,235	2,787	.....	.....	.....	.....	200	.....	25	4,247	9
373	109	.....	221	.....	.....	.....	.....	.....	703	10
643	.....	.....	.....	.....	.....	.....	.....	72	715	11
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
.....	.....	16,772	1,287	.....	1,431	.....	.....	.....	19,490	13
.....	100	.....	.....	3,844	.....	.....	.....	574	4,518	14
.....	.....	.....	300	.....	15,000	1,200	.....	229	16,729	15
1,261	.....	.....	.....	.....	.....	.....	.....	158	1,419	16
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
1,685	495	.....	.....	5,654	3,293	3,946	.....	688	15,761	18
2	500	.....	103	.....	.....	.....	.....	2	607	19
.....	1,168	.....	.....	.....	.....	.....	.....	289	1,457	20
.....	.....	.....	2,045	.....	.....	.....	.....	4	2,049	21
.....	11	.....	12,500	.....	.....	.....	.....	.....	12,511	22
1,072	.....	.....	1,608	.....	.....	.....	.....	.....	2,680	23
3,798	.....	.....	.....	.....	.....	.....	.....	160	3,958	24
193	.....	.....	.....	.....	.....	.....	.....	.....	193	25
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27
.....	209	.....	.....	.....	.....	3,963	.....	.....	4,172	28
.....	60	.....	.....	3,200	.....	4,050	.....	.....	7,310	29
383	21	.....	.....	.....	.....	500	.....	250	1,154	30
.....	791	.....	.....	.....	.....	1,150	.....	163	2,104	31
230	1,859	.....	2,088	.....	.....	.....	.....	550	4,727	32
.....	100	.....	.....	.....	44	.....	.....	63	207	33
.....	471	.....	3,000	.....	.....	.....	.....	2,050	5,521	34
.....	.....	.....	.....	.....	.....	971	.....	100	1,071	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
3,097	.....	21,687	200	2,617	.....	6,500	.....	.....	34,101	37
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38
.....	.....	.....	603	.....	415	510	.....	15	1,543	39
875	1,038	.....	2,142	.....	.....	.....	.....	50	4,105	40
.....	.....	.....	1,239	.....	.....	.....	.....	.....	1,239	41
.....	.....	.....	1,607	2,697	.....	.....	.....	899	5,203	42
.....	.....	.....	.....	.....	.....	4,691	.....	.....	4,691	43
319	350	7,000	.....	.....	.....	.....	.....	.....	7,669	44
2,761	.....	.....	.....	.....	.....	.....	.....	285	3,046	45
.....	666	.....	.....	.....	.....	.....	.....	15	681	46
.....	.....	.....	424	.....	.....	.....	.....	.....	424	47
.....	.....	.....	.....	7,810	.....	.....	.....	.....	7,810	48
4,686	.....	.....	1,654	.....	.....	225	.....	305	6,870	49
.....	.....	.....	4,852	1,366	.....	.....	.....	.....	6,218	50
.....	697	.....	5,000	.....	.....	2,500	.....	149	8,346	51
.....	2,026	.....	1,100	.....	.....	.....	.....	704	3,830	52

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
53. Bosanquet, Lambton	3,029	17,323	34	....	43	.....	3,500
54. Brant, Bruce	1,334	15,799	100	.....	92	8,013	2,500
55. Brantford, Brant	3,715	32,199	83	57	3,008	.....	.....
56. Brighton, Northumberland	1,698	10,949	....	8	.....	.....	400
57. Brock, Ontario	1,468	17,606	75	31	.....	.....	3,500
58. Bromley, Renfrew	5,911	7,735	261	.....	.....	.....	2,500
59. Brooke, Lambton	.....	37,189	84	.....	35	.....	22,000
60. Brougham, Renfrew	196	899	48	.....	.....	.....	.....
61. Bruce, Bruce	681	17,330	34	4	40	1,221	3.150
62. Brudenell and Lyndock, Renfrew	707	3,011	72	.....	.....	.....	.....
63. Brunel, Muskoka	291	2,551	2	24	.....	.....	.....
64. Bucke, Nipissing	84	1,601	166	.....	.....	.....	.....
65. Burford, Brant	1,847	23,905	....	23	118	.....	.....
66. Burgess, N. Lanark	136	3,448	....	8	.....	.....	.....
67. Burleigh & Anstruther, Peterboro'	1,036	1,954	50	12	.....	.....	416
68. Burpee, Manitoulin	14	815	....	.....	.....	.....	65
69. Caistor, Lincoln	1,392	6,744	8	8	3	.....	700
70. Caldwell, Nipissing	395	1,738	315	5	.....	.....	700
71. Caledon, Peel	266	18,324	219	91	13	1,158	3,000
72. Caledonia, Prescott	90	8,080	96	6	.....	.....	.....
73. Calvin, Nipissing	237	1,406	....	.....	.....	.....	500
74. Cambridge, Russell	.....	15,110	205	.....	.....	.....	4,000
75. Camden, Kent	138	18,992	....	29	.....	.....	3,404
76. Camden East, Lennox and Add	578	25,100	184	186	.....	.....	5,851
77. Cameron, Nipissing	114	307	....	.....	.....	.....	.....
78. Canborough, Haldimand	462	4,618	8	1	.....	.....	300
79. Caradoc, Middlesex	5,312	21,737	51	5	.....	.....	6,856
80. Carden, Victoria	109	2,857	....	.....	.....	43	375
81. Cardiff, Haliburton	160	1,518	....	.....	.....	.....	.....
82. Cardwell, Muskoka	1,438	1,592	....	2	.....	.....	.....
83. Carling, Parry Sound	327	1,127	....	4	.....	.....	.....
84. Carlow, Hastings	195	2,239	....	.....	.....	.....	600
85. Carnarvon, Manitoulin	596	2,041	34	3	.....	.....	900
86. Carrick, Bruce	1,603	18,038	208	22	300	.....	400
87. Cartwright, Durham	122	10,292	....	7	.....	.....	1,700
88. Cavan, Durham	323	16,043	....	.....	.....	.....	2,057
89. Cayuga, N., Haldimand	89	7,502	52	.....	.....	.....	.....
90. Cayuga, S., Haldimand	154	3,127	....	.....	.....	.....	.....
91. Chaffey, Muskoka	233	3,161	12	.....	.....	.....	266
92. Chandos, Peterborough	134	2,953	....	.....	.....	.....	.....
93. Chapleau, Algoma	20	2,770	282	80	.....	32	1,016
94. Chapman, Parry Sound	490	3,035	30	18	.....	.....	.....
95. Chapple, Rainy River	117	3,381	65	.....	.....	.....	1,000
96. Charlottenburg, Glengarry	734	24,680	603	1	.....	.....	8,133
97. Charlotteville, Norfolk	.....	14,183	19	8	410	1,006	132
98. Chatham, Kent	11	48,261	16	.....	.....	.....	18,662
99. Chinguacousy, Peel	.....	22,560	81	8	1,368	5,457	.....
100. Christie, Parry Sound	548	1,823	52	14	.....	.....	.....
101. Clarence, Russell	3,484	17,735	196	.....	.....	.....	4,000
102. Clarendon and Miller, Frontenac	281	2,136	....	.....	.....	.....	.....
103. Clarke, Durham	1,002	17,659	....	87	.....	.....	.....
104. Clinton, Lincoln	275	14,591	....	.....	11	.....	3,295

MUNICIPALITIES, FOR THE YEAR 1905—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	1,224	.....	6	.....	4	25,163	902	205	283	4,159	.....	53
.....	.....	.....	.....	250	146	28,234	993	29	280	5,762	.....	54
.....	.....	.....	.....	.....	566	39,628	2,760	298	642	12,210	.....	55
.....	.....	.....	.....	.....	99	13,154	581	35	212	1,879	.....	56
.....	.....	.....	.....	.....	325	23,005	1,139	38	547	4,565	144	57
.....	8,072	.....	28	.....	*7,774	32,281	454	9	174	1,063	.....	58
.....	2,445	.....	39	.....	946	62,738	795	440	199	15,521	.....	59
.....	.....	.....	.....	.....	8	1,151	188	.....	41	80	.....	60
1,350	.....	.....	.....	253	297	24,360	954	23	282	5,814	.....	61
.....	.....	.....	.....	.....	.....	3,790	349	2	100	118	.....	62
1,000	.....	.....	.....	.....	120	3,988	306	3	64	526	.....	63
.....	.....	.....	.....	.....	188	2,039	371	.....	141	268	36	64
.....	1,535	269	.....	.....	128	27,825	1,088	427	596	7,127	.....	65
.....	.....	.....	.....	.....	2	3,594	274	.....	62	324	.....	66
.....	.....	1,000	.....	.....	253	4,721	209	.....	101	475	.....	67
.....	.....	.....	.....	.....	.....	894	104	.....	23	8	124	68
.....	.....	.....	.....	.....	95	8,950	328	.....	101	1,305	.....	69
.....	.....	.....	.....	.....	.....	3,153	233	.....	95	541	.....	70
.....	.....	.....	.....	.....	†2,276	25,347	1,236	265	350	5,880	168	71
.....	.....	.....	.....	.....	38	8,310	527	59	195	1,476	250	72
.....	.....	.....	.....	.....	10	2,153	152	.....	10	426	.....	73
.....	2,012	.....	.....	.....	86	21,413	957	6	387	3,238	.....	74
700	3,653	.....	.....	.....	1,297	28,213	846	266	293	1,533	.....	75
.....	.....	.....	.....	.....	144	32,043	915	4	350	4,529	3,023	76
.....	.....	.....	.....	.....	.....	421	107	.....	24	2	.....	77
.....	.....	.....	.....	.....	6	5,395	299	10	111	444	.....	78
.....	.....	.....	.....	5	199	34,165	968	19	318	3,607	.....	79
1,050	.....	.....	1	.....	76	4,511	281	5	46	387	.....	80
550	.....	.....	.....	3	6	2,237	146	.....	92	83	.....	81
.....	.....	.....	.....	.....	82	3,114	266	.....	79	468	.....	82
.....	.....	.....	.....	.....	17	1,475	139	.....	27	1	.....	83
.....	.....	.....	.....	235	130	3,399	349	3	44	873	.....	84
.....	.....	.....	.....	.....	3	3,577	228	.....	32	899	.....	85
.....	.....	.....	.....	.....	129	20,700	749	11	384	2,036	.....	86
2,000	.....	.....	.....	.....	54	14,175	490	.....	162	1,744	.....	87
.....	.....	.....	.....	.....	54	18,477	795	16	204	4,379	.....	88
.....	.....	.....	.....	.....	108	7,751	383	23	156	546	.....	89
.....	.....	.....	.....	.....	6	3,287	120	.....	53	146	.....	90
.....	.....	.....	.....	.....	14	3,686	390	.....	96	2,495	.....	91
.....	.....	.....	.....	.....	60	3,147	323	.....	44	173	.....	92
.....	.....	.....	.....	.....	.....	4,200	194	.....	167	59	483	93
.....	.....	.....	.....	.....	.....	3,573	261	.....	75	254	.....	94
1,400	.....	.....	6	.....	13	5,982	442	19	164	595	.....	95
.....	.....	.....	.....	.....	746	34,897	1,404	246	330	11,246	.....	96
.....	.....	.....	.....	.....	474	16,232	746	122	232	1,968	50	97
.....	13,868	.....	45	8,537	6	89,406	2,273	877	1,154	3,169	.....	98
.....	.....	.....	.....	.....	106	29,580	1,271	.....	223	4,620	.....	99
.....	.....	.....	.....	.....	153	2,590	210	.....	28	262	97	100
4,700	.....	.....	.....	.....	49	30,164	1,207	240	248	2,870	.....	101
.....	.....	.....	.....	.....	18	2,435	206	.....	82	115	.....	102
.....	.....	.....	.....	.....	.....	18,748	1,065	.....	527	3,232	.....	103
.....	.....	.....	.....	.....	64	18,236	787	190	161	3,545	.....	104

* Including $7,700 from Government in aid of drainage works.
† Including $2,263 from Harris Estate.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1905.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund, investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
53. Bosanquet	35	176	2,987	6,373	3,936	28	.....
54. Brant	94	76	3,908	6,945	.....	.....	4,592
55. Brantford	84	795	4,662	12,978	.....	.....	.....
56. Brighton	59	97	2,394	5,802	.....	.....	....
57. Brock	268	101	4,288	6,787	.....	.....	.....
58. Bromley	35	16	1,419	3,684	21,317	.....	.....
59. Brooke	30	373	3,678	8,815	6,637	.....	.....
60. Brougham	35	.....	65	598	.....	.....	.....
61. Bruce	45	10	3,085	7,488	96	1,445	.....
62. Brudenell and Lyndock	58	53	224	2,606	.....	.....	.....
63. Brunel	5	5	.....	2,439	.....	.....	.....
64. Bucke	50	.....	.....	892	.....	.....	.....
65. Burford	156	704	3,751	9,590	1,003	.....	76
66. Burgess	.....	.....	805	1,724	.....	.....	.....
67. Burleigh and Anstruther	177	.....	161	1,733	.....	.....	.....
68. Burpee	2	.....	.....	382	.....	.....	.....
69. Caistor	.....	10	1,764	3,364	.....	.....	.....
70. Caldwell	.....	.....	.....	1,216	.....	.....	.....
71. Caledon	38	168	3,716	8,747	.....	.....	296
72. Caledonia	.....	.....	1,122	4,267	60	.....	.....
73. Calvin	102	15	.....	784	.....	.....	.....
74. Cambridge	57	44	1,513	4,437	2,419	.....	.....
75. Camden	100	722	3,440	6,521	4,087	.....	.....
76. Camden East	5	415	7,148	9,127	.....	.....	.....
77. Cameron	17	.....	.....	100	....	.....	.....
78. Canborough	1	116	.....	2,157	.....	.....	.....
79. Caradoc	94	27	7,640	7,939	1,427	.....	.....
80. Carden	3	5	648	2,578	.....	....	50
81. Cardiff	.....	.....	73	1,635	.....	.....	.....
82. Cardwell	10	5	.....	800	.....	.....	.....
83. Carling	.....	.....	.....	799	.....	.....	.....
84. Carlow	.....	81	185	1,157	.....	.....	.....
85. Carnarvon	4	.....	.....	1,135	.....	.....	.....
86. Carrick	74	66	3,677	10,384	.....	530	.....
87. Cartwright	249	157	2,116	5,760	.....	.....	.....
88. Cavan	50	15	3,529	6,316	529	.....	.....
89. Cayuga, N.	23	41	2,276	3,910	.....	.....	.....
90. Cayuga, S.	.....	65	1,099	1,506	.....	.....	.....
91. Chaffey	222	2	.....	265	.....	.....	.....
92. Chandos	188	30	195	1,854	.....	.....	.....
93. Chapleau	38	.....	.....	1,711	.....	.....	30
94. Chapman	17	.....	.....	1,912	.....	.....	.....
95. Chapple	147	.....	.....	2,824	.....	.....	.....
96. Charlottenburg	188	114	3,331	10,763	476	.....	.....
97. Charlotteville	69	105	2,660	6,074	125	.....	1,006
98. Chatham	400	875	4,876	8,699	16,037	.....	.....
99. Chinguacousy	63	40	7,208	9,753	.....	.....	5,550
100. Christie	7	38	.....	846	.....	.....	....
101. Clarence	168	15	3,076	12,126	603	.....	.....
102. Clarendon and Miller	.....	20	131	1,261	.....	.....	.....
103. Clarke	70	384	4,000	8,228	.....	.....	.....
104. Clinton	.....	20	5,031	4,709	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued*								Assets on December 31, 1905			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of money borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
190	1,627	.....	3,500	436	.....	103	24,940	223	1,000	90	53
238	.....	.....	2,500	131	.....	139	25,687	2,547	5	.....	54
951	203	.....	.....	712	.....	1,857	38,152	1,476	923	.....	55
.....	.....	.....	400	8	.....	120	11,587	1,567	.....	.....	56
143	.....	.....	3,500	118	.....	150	21,788	1,217	.....	.....	57
.....	538	.....	2,500	267	.....	174	31,650	631	1,721	.....	58
1,277	4,832	.....	18,057	1,220	.....	330	62,204	534	15,084	.....	59
.....	.....	.....	.....	.....	.....	.....	1,007	144	268	.....	60
265	.....	.....	3,279	237	32	272	23,327	1,033	8	1,445	61
101	.....	.....	.....	32	.....	32	3,675	115	371	.....	62
50	.....	.....	.....	12	.....	19	3,429	559	974	.....	63
72	.....	.....	.....	146	.....	.....	1,976	63	760	.....	64
.....	664	.....	.....	108	.....	339	25,629	2,196	298	.....	65
.....	.....	.....	.....	.....	.....	2	3,191	403	7	.....	66
.....	.....	251	1,440	161	.....	13	4,721	.....	253	.....	67
.....	.....	149	71	.....	.....	13	876	18	780	.....	68
.....	.....	.....	700	21	.....	180	7,773	1,177	1,200	.....	69
89	.....	.....	692	51	.....	178	3,095	58	2,631	.....	70
.....	.....	.....	3,000	77	.....	538	24,479	868	129	.....	71
79	92	.....	.....	36	.....	9	8,172	138	4,797	.....	72
150	.....	.....	406	29	.....	9	2,083	70	1,077	.....	73
225	755	1,378	4,261	951	.....	365	20,993	420	4,703	.....	74
.....	3,850	1,100	4,007	810	.....	541	28,116	97	8,628	.....	75
90	.....	.....	5,850	170	.....	332	31,958	85	1,151	.....	76
.....	.....	.....	150	6	.....	1	407	14	297	.....	77
.....	.....	.....	543	1	.....	39	3,721	1,674	554	.....	78
1,027	1,359	.....	6,856	465	.....	250	31,996	2,169	4,290	.....	79
50	.....	.....	350	64	.....	10	4,477	34	563	.....	80
49	.....	.....	.....	5	.....	27	2,110	127	1,126	.....	81
.....	.....	.....	.....	.....	.....	9	1,637	1,477	925	.....	82
51	.....	.....	.....	31	.....	.....	1,048	427	1,419	.....	83
131	.....	.....	292	48	.....	23	3,186	213	1,663	.....	84
126	.....	.....	750	76	.....	46	3,296	281	2,669	.....	85
.....	.....	.....	400	367	.....	199	18,877	1,823	3	5,954	86
369	.....	385	1,922	471	.....	121	13,946	229	435	.....	87
125	.....	.....	2,057	179	.....	269	18,463	14	1,103	.....	88
.....	.....	.....	.....	.....	.....	46	7,404	347	146	.....	89
.....	.....	.....	.....	.....	.....	21	3,010	277	247	.....	90
97	.....	.....	.....	11	.....	108	3,686	.....	2,049	.....	91
.....	.....	.....	.....	.....	.....	155	2,962	185	1,683	.....	92
147	.....	.....	816	266	.....	268	4,179	21	373	.....	93
.....	.....	.....	.....	.....	.....	13	2,532	1,041	911	.....	94
26	.....	.....	1,600	75	.....	89	5,981	1	3,956	.....	95
346	.....	652	4,585	586	.....	429	34,696	201	8,233	.....	96
.....	.....	1,387	886	263	.....	539	16,232	.....	936	.....	97
1,293	9,057	2,393	33,088	4,597	.....	565	89,353	53	39,387	.....	98
257	.....	.....	.....	86	.....	509	29,580	.....	431	32,569	99
100	.....	.....	60	12	.....	68	1,728	862	944	.....	100
214	69	100	6,000	609	.....	772	28,317	1,847	9,938	.....	101
.....	.....	.....	67	.....	.....	26	1,908	527	277	.....	102
220	.....	258	.....	74	.....	398	18,456	292	2,575	.....	103
94	.....	.....	3,217	202	.....	277	18,236	.....	418	.....	104

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on 31st December, 1905.—*Continued*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
53. Bosanquet	.....	300	9,369	10,982
54. Brant	4,592	.....	3,047	10,191
55. Brantford	68,742	.....	8,710	79,851
56. Brighton	.....	700	279	2,546
57. Brock	.....	1,790	919	3,926
58. Bromley	.....	680	.....	3,032
59. Brooke	.....	.....	2,564	18,182
60. Brougham	.....	.....	.....	412
61. Bruce	.....	1,200	5,016	8,702
62. Brudenell and Lyndock	.....	650	354	1,490
63. Brunel	.....	800	1,100	3,433
64. Bucke	.....	400	2,360	3,583
65. Burford	2,588	950	.....	6,032
66. Burgess	.....	600	.....	1,010
67. Burlington and Anstruther	....	2,100	359	2,712
68. Burpee	.....	104	.....	902
69. Caistor	.....	1,000	.....	3,377
70. Caldwell	.....	262	193	3,144
71. Caledon	296	2,000	.....	3,293
72. Caledonia	.....	700	249	5,884
73. Calvin	.....	.....	679	1,826
74. Cambridge	50	1,150	904	7,227
75. Camden	.....	800	6,043	15,568
76 Camden East	.....	4,610	175	6,021
77. Cameron	.....	.....	.....	311
78. Canborough	.....	.....	.....	2,228
79. Caradoc	.....	2,800	2,829	12,088
80. Carden	50	.....	.....	647
81. Cardiff	.....	.....	833	2,086
82. Cardwell	.....	.....	.....	2,402
83. Carling	.....	75	455	2,376
84. Carlow	.....	65	719	2,660
85. Carnarvon	.....	.....	644	3,594
86. Carrick	.....	2,850	220	10,850
87. Cartwright	.....	2,000	1,631	4,295
88. Cavan	.....	5,700	808	7,625
89. Cayuga, N.	.....	22	24	539
90. Cayuga, S.	.....	1,200	.....	1,724
91. Chaffey	.....	.....	104	2,153
92. Chandos	.....	.....	.....	1,868
93. Chapleau	30	600	3,972	4,996
94. Chapman	.....	228	.....	2,180
95. Chapple	.....	40	1,827	5,824
96. Charlottenburg	.....	1,050	4,548	14,032
97. Charlotteville	8,764	800	145	10,645
98. Chatham	.....	2,500	46,059	87,999
99. Chinguacousy	349	1,000	1,288	35,637
100. Christie	.....	1,123	100	3,029
101. Clarence	.....	644	5,309	17,738
102. Clarendon and Miller	.....	.....	.....	804
103. Clarke	....	6,350	732	9,949
104. Clinton	.....	400	2,474	3,292

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	680	7,723	.....	.....	.....	1,687	10,090	53
.....	.....	.....	3,047	.....	.....	.....	.....	225	3,272	54
.....	.....	.....	7,877	1,665	.....	.....	.....	4,882	14,424	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
.....	95	.....	668	.....	.....	.....	.....	158	921	57
1,849	.....	.....	.....	7,534	.....	.....	.....	.....	9,383	58
.....	2,797	.....	2,281	14,261	6,660	9,000	.....	1,723	36,722	59
85	.....	.....	.....	.....	.....	.....	.....	18	103	60
.....	.....	.....	4,970	.....	.....	.....	.....	40	5,010	61
167	.....	.....	354	.....	.....	.....	.....	.....	521	62
.....	837	.....	1,100	.....	.....	.....	.....	12	1,949	63
.....	.....	.....	2,360	.....	.....	.....	.....	106	2,466	64
.....	.....	.....	.....	1,682	269	.....	.....	1,424	3,375	65
.....	25	.....	.....	.....	.....	.....	.....	.....	25	66
.....	.....	.....	.....	.....	1,583	636	.....	100	2,319	67
.....	234	.....	.....	.....	1,274	65	.....	20	1,593	68
1,876	.....	.....	.....	.....	.....	.....	.....	.....	1,876	69
.....	457	.....	193	.....	.....	808	.....	260	1,718	70
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	71
844	1,324	.....	177	77	.....	.....	.....	.....	2,422	72
.....	656	.....	600	.....	.....	94	.....	147	1,497	73
1,189	986	.....	220	3,423	3,494	.....	.....	179	9,491	74
.....	1,388	.....	4,293	17,664	.....	3,404	.....	1,123	27,872	75
.....	.....	.....	175	.....	.....	.....	.....	200	375	76
.....	70	.....	.....	.....	.....	.....	.....	71	141	77
1,385	.....	.....	.....	.....	.....	308	.....	.....	1,693	78
4,021	.....	.....	2,076	1,811	.....	.....	.....	1,680	9,588	79
.....	.....	.....	1,400	.....	.....	180	.....	60	1,640	80
127	192	.....	833	.....	.....	.....	.....	.....	1,152	81
.....	795	.....	.....	.....	.....	.....	.....	269	1,064	82
.....	740	.....	455	.....	.....	.....	.....	30	1,225	83
.....	1,356	.....	719	.....	.....	624	.....	125	2,824	84
.....	981	.....	644	.....	.....	900	.....	77	2,602	85
.....	.....	.....	3,200	.....	4,000	.....	.....	.....	7,200	86
.....	.....	4,090	1,631	.....	.....	667	.....	.....	6,388	87
.....	19	.....	1,375	.....	.....	.....	.....	866	2,260	88
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	90
.....	.....	.....	104	.....	.....	266	.....	.....	370	91
.....	788	.....	.....	.....	.....	.....	.....	365	1,153	92
.....	13	.....	3,938	.....	.....	200	.....	230	4,381	93
.....	1,430	.....	.....	.....	.....	.....	.....	95	1,525	94
.....	2,030	.....	1,827	.....	.....	.....	.....	50	3,907	95
.....	.....	.....	4,548	.....	5,571	8,133	.....	134	18,386	96
.....	.....	2,978	.....	.....	.....	132	.....	.....	3,110	97
4,876	.....	.....	6,768	63,669	12,758	18,662	.....	8,237	114,970	98
.....	.....	.....	1,288	.....	.....	.....	349	55	1,692	99
.....	.....	.....	100	.....	.....	.....	.....	.....	100	100
2,020	5,780	.....	5,305	1,046	.....	2,000	.....	.....	16,151	101
156	254	.....	.....	.....	.....	.....	.....	.....	410	102
.....	.....	.....	732	.....	272	.....	.....	.....	1,004	103
.....	.....	.....	2,430	.....	.....	78	.....	11	2,519	104

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS.

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
105. Cockburn Island, Manitoulin	338	1,173	....	20	.....	.....	.....
106. Colborne, Huron	1,768	9,238	28	.....	.....	.....	1,800
107. Colchester, N., Essex	100	15,737	....	2	72	.....	6,500
108. Colchester, S., Essex	830	19,751	256	8	756	.....	.....
109. Collingwood, Grey	2,264	17,208	44	18	4	.....	2,447
110. Cornwall, Stormont	5,203	21,216	322	.....	75	.....	.....
111. Cramahe, Northumberland	1,752	12,234	33	57	.....	.....	1,200
112. Crosby, N., Leeds	7	6,126	....	1	.....	8,329	.....
113. Crosby, S., Leeds	1,878	7,127	78	14	134	4,441	420
114. Crowland, Welland	642	5,664	32	7	.....	.....	300
115. Culross, Bruce	1,740	12,258	62	.....	25	.....	.....
116. Cumberland, Russell	1,027	21,672	152	.....	.....	.....	2,983
117. Dalhousie, Sherbrooke, N., Lanark	1,330	5,193	96	.....	14	.....	.....
118. Dalton, Victoria	306	1,693	....	.....	.....	.....	.....
119. Darling, Lanark	346	2,087	....	.....	14	.....	.....
120. Darlington, Durham	1,567	21,703	....	13	28	.....	3,315
121. Dawn, Lambton	311	24,868	....	28	3	.....	14,000
122. Day and Bright additional, Algoma	153	929	5	.....	.....	.....	.....
123. Delaware, Middlesex	590	13,571	16	16	16	.....	3,000
124. Denbigh, Ab. & Ash, Lennox & Add.	73	2,416	....	.....	.....	.....	.....
125. Derby, Grey	3,993	10,281	....	13	39	.....	6,565
126. Dereham, Oxford	11,489	29,191	....	638	249	.....	.....
127. Dorchester, N. Middlesex	1,796	21,652	77	1	175	.....	.....
128. Dorchester, S. Elgin	970	13,870	....	3	.....	.....	303
129. Douro, Peterborough	1,273	8,263	....	.....	.....	.....	1,500
130. Dover, Kent	.....	26,056	303	11	167	.....	.....
131. Downie, Perth	1,154	20,528	79	6	.....	.....	5,550
132. Draper, Muskoka	219	2,909	41	.....	.....	.....	.....
133. Drummond, Lanark	409	9,818	78	1	.....	.....	.....
134. Drury, Denison & Graham, Algoma	1,130	3,548	132	50	.....	.....	500
135. Dumfries, N. Waterloo	4,417	13,042	100	2	.....	.....	2,900
136. Dumfries, S. Brant	1,406	16,943	55	138	5	.....	2,500
137. Dummer, Peterborough	982	6,981	....	35	56	.....	200
138. Dungannon, Hastings	178	2,496	10	.....	.....	.....	.....
139. Dunn, Haldimand	568	3,792	24	.....	5	.....	.....
140. Dunwich, Elgin	8,550	23,384	24	.....	634	.....	1,500
141. Dymond, Nipissing	184	2,352	....	2	.....	200	100
142. Dysart, Guilford, etc., Haliburton	1,417	5,275	20	1,091	.....	.....	800
143. Easthope, N. Perth	2,988	14,203	49	1	34	.....	.....
144. Easthope, S. Perth	796	10,414	194	4	.....	.....	568
145. Eastnor, Bruce	14	9,927	147	141	111	75	1,740
146. Edwardsburg, Grenville	.....	13,497	12	.....	763	.....	4,694
147. Egremont, Grey	1,187	14,258	36	2	13	.....	1,500
148. Ekfrid, Middlesex	140	19,107	48	24	.....	.....	413
149. Elderslie, Bruce	1,032	12,728	....	.....	26	.....	1,700
150. Eldon, Victoria	1,921	12,851	147	10	56	.....	1,500
151. Elizabethtown, Leeds	1,383	17,678	73	908	207	.....	5,329
152. Ellice, Perth	674	24,261	159	.....	57	.....	7,500
153. Elma, Perth	14,149	26,749	135	3	302	.....	.....
154. Elmsley, N. Lanark	893	4,424	....	5	.....	.....	.....
155. Elmsley, S. Leeds	.....	4,401	34	.....	.....	.....	400
156. Elzevir and Grimsthrope, Hastings	.....	3,866	40	.....	.....	.....	1,348

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	5	1,536	177	.....	84	276	50	105
.....	.....	.....	.....	.....	20	12,854	713	382	111	1,586	....	106
1,600	3,927	.....	132	270	*2,144	30,484	847	179	334	3,176	....	107
.....	30,334	.....	941	...	40	52,916	940	912	999	3,711	....	108
.....	.....	.....	.....	.....	236	22,221	897	1,639	295	3,400	208	109
550	.....	.....	.....	.....	†4,782	32,148	933	236	470	3,666	....	110
.....	.....	.....	.....	.....	209	15,485	637	29	466	1,930	....	111
.....	.....	.....	.....	.....	1,074	15,537	472	3	65	286	....	112
.....	.....	.....	.....	.....	.....	14,092	485	41	88	2,593	....	113
.....	.....	.....	.....	.....	211	6,856	328	15	239	993	....	114
.....	.....	.....	.....	35	131	14,251	707	8	236	2,234	....	115
.....	3,651	.....	.....	.....	188	29,673	1,080	84	295	3,939	....	116
.....	.....	.....	.....	.....	53	6,686	379	.....	110	798	17	117
.....	.....	.....	.....	.....	.....	1,999	193	.....	64	208	....	118
.....	.....	.....	.....	.....	2	2,449	234	17	63	109	.....	119
.....	.....	.....	.....	.....	105	26,731	853	47	289	4,536	....	120
1,140	9,246	606	5	.....	1,292	51,499	955	210	376	1,423	44	121
.....	.....	.....	.....	.....	.....	1,087	219	63	24	.....	....	122
.....	.....	.....	.....	.....	191	17,400	513	20	248	2,465	....	123
.....	.....	.....	.....	.....	41	2,530	842	.....	114	134	....	124
.....	.....	.....	.....	.....	‡2,415	23,306	597	141	274	3,643	....	125
.....	.....	.....	.....	1,038	682	43,287	1,546	5	294	9,564	56	126
.....	4,896	.....	18	.....	981	29,596	1,159	410	289	7,642	....	127
.....	.....	.....	.....	.....	62	15,208	836	39	178	4,301	....	128
900	.....	.....	.....	.....	1,445	13,381	492	65	149	1,469	....	129
.....	26,062	.....	134	.....	213	52,946	1,842	151	907	2,369	....	130
.....	.....	.....	.....	380	87	27,784	899	14	195	6,669	....	131
.....	.....	.....	.....	.....	1,764	4,933	300	3	60	2,057		132
.....	9,733	.....	29	.....	1,455	21,523	508	151	222	907	....	133
.....	.....	.....	.....	.....	632	5,492	614	30	144	1,711	....	134
.....	.....	.....	.....	.....	137	20,598	753	88	240	6,394	....	135
.....	.....	.....	.....	.....	566	21,613	950	131	179	5,635	...	136
.....	.....	.....	.....	...	10	8,264	455	7	142	843	....	137
.....	.....	.....	.....	210	3	2,897	232	.....	23	373	....	138
.....	.....	.....	.....	.....	.....	4,389	224	.....	48	188	....	139
.....	2,800	.....	.....	.....	.....	36,892	1,193	1,999	368	6,766	....	140
.....	.....	.....	.....	.....	330	3,168	328	.....	60	706	....	141
.....	.....	.....	.....	.....	12	8,615	386	4	415	1,531	55	142
.....	.....	.....	.....	324	47	17,646	737	.....	182	2,785	....	143
.....	.....	.....	.....	195	25	12,196	574	14	197	2,268	....	144
.....	.....	.....	.....	.....	290	12,445	578	55	461	1,299	43	145
.....	.....	.....	.....	.....	20	18,986	757	.....	251	1,162	325	146
1,800	.....	.....	.....	.....	225	19,021	616	26	239	2,964	....	147
.....	3,734	.....	.....	.....	234	23,700	954	177	312	4,095	....	148
.....	.....	.....	.....	.....	190	15,676	680	.....	193	2,821	...	149
.....	.....	.....	.....	.....	291	16,776	902	69	422	2,612	125	150
.....	.....	.....	.....	.....	.....	25,578	1,116	61	476	3,822	....	151
.....	.....	.....	.....	332	211	33,194	1,164	126	261	4,851	...	152
.....	.....	.....	.....	451	77	41,866	901	576	703	3,429	255	153
.....	.....	.....	.....	.....	.....	5,322	286	.....	119	781	....	154
.....	.....	.....	.....	.....	.....	4,835	319	616	69	775	....	155
.....	.....	.....	.....	...	61	5,315	577	12	90	477	....	156

* Including $1,510 from other municipalities as share of debt.
† Including $764 from Gov't and $3,993 from other municipalities for drains, etc.
‡ Including $2,112 from Gov't and $228 from other municipalities for drains, etc.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Townships.	Disbursements, 1905.						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
105. Cockburn Island	.....	10	.....	737	.....	.....	.....
106. Colborne	.....	.....	1,793	4,010	.....	.....	.....
107. Colchester, N.	20	197	1,991	5,409	8,828	.....	.....
108. Colchester, S.	377	110	2,455	6,636	18,356	.....	.....
109 Collingwood	161	281	2,755	7,710	.....	.....	.....
110. Cornwall	299	290	2,589	9,780	5,428	.....	.....
111. Cramahe	16	189	3,976	6,325	.....	.....	.....
112. Crosby, N	.....	6	824	3,461	.....	371	.....
113. Crosby, S.	.....	18	1,035	4,164	.....	.....	69
114. Crowland	17	47	1,597	2,816	.....	.....	.....
115. Culross	38	32	2,908	6,205	.....	.....	.....
116. Cumberland	93	119	2,199	8,547	6,009	.....	.....
117. Dalhousie	10	.....	902	3,104	.....	.....	.....
118. Dalton	.....	.....	132	1,090	80	.....	.....
119. Darling	6	14	253	1,258	.....	.....	.....
120. Darlington	121	443	5,024	9,629	.....	.....	.....
121. Dawn	27	673	3,080	8,674	13,553	.....	.....
122. Day and Bright additional	.....	.....	.....	190	.....	.....	.....
123. Delaware	35	80	2,545	2,759	131	.....	.....
124. Denbigh, Abinger and Ashby	14	72	168	1,379	.....	.....	.....
125. Derby	105	65	1,450	3,744	4,501	.....	.....
126. Dereham	169	172	5,386	8,046	2,588	.....	.....
127. Dorchester, N.	30	128	5,347	7,360	5,040	.....	.....
128. Dorchester, S.	.....	.....	3,142	4,107	2,093	.....	.....
129. Douro	30	6	2,364	4,174	919	.....	.....
130. Dover	73	641	.....	6,595	20,704	.....	.....
131. Downie	240	132	4,752	5,377	231	.....	111
132. Draper	27	110	.....	1,492	.....	.....	.....
133. Drummond	54	5	2,949	3,805	1,120	.....	7,895
134. Drury, Denison and Graham	40	.....	.....	550	.....	.....	.....
135. Dumfries, N.	188	14	3,226	4,787	.....	.....	.....
136. Dumfries, S.	94	264	3,030	6,719	.....	.....	.....
137. Dummer	.....	300	1,642	3,181	.....	.....	.....
138. Dungannon	.....	.....	152	1,722	.....	.....	.....
139. Dunn	7	140	1,311	1,945	.....	.....	.....
140. Dunwich	97	5	5,745	6,205	4,481	.....	.....
141. Dymond	.....	5	.....	938	.....	.....	100
142. Dysart	.....	47	1,149	2,288	.....	.....	.....
143. Easthope, N.	17	165	4,055	4,581	273	.....	.....
144. Easthope, S.	28	53	2,435	3,639	1,323	.....	.....
145. Eastnor	12	64	869	3,433	494	290	.....
146. Edwardsburg	19	71	6,190	8,874	505	.....	.....
147. Egremont	10	115	2,900	8,319	54	.....	.....
148. Ekfrid	13	113	5,261	5,343	4,655	.....	.....
149. Elderslie	32	34	2,787	5,390	.....	.....	.....
150. Eldon	42	434	2,964	5,898	226	.....	.....
151. Elizabethtown	28	55	7,054	8,936	266	331	.....
152. Ellice	83	182	4,145	5,935	2,507	.....	.....
153. Elma	18	85	5,642	7,511	4,727	223	.....
154. Elmsley, N.	40	5	1,233	1,989	.....	.....	.....
155. Elmsley, S.	.....	64	832	1,931	.....	.....	.....
156. Elzevir	23	74	.....	2,561	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets on December 31st, 1905.			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	.....	34	1,368	168	2,180	.....	105
.....	.....	.....	1,800	97	.....	71	10,563	2,291	439	.....	106
.....	5,036	589	1,000	1,879	.....	206	29,691	793	16,101	.....	107
241	2,650	1,587	.....	1,770	.....	249	40,993	11,923	17,284	.....	108
135	.....	103	2,447	184	.....	270	20,485	1,736	289	.....	109
341	765	.....	.....	1,085	.....	561	26,443	5,705	2,077	.....	110
.....	.....	.....	1,200	332	.....	257	15,357	128	1,396	.....	111
108	.....	8,500	.....	731	.....	31	14,858	679	1,275	2,507	112
.....	.....	4,500	360	233	.....	40	13,626	466	.....	.....	113
.....	.....	.....	300	6	.....	17	6,375	481	1,337	.....	114
91	.....	.....	.....	39	.....	5	12,503	1,748	1	.....	115
374	811	102	3,983	807	28	42	28,512	1,161	11,302	.....	116
.....	.....	173	.....	73	.....	36	5,602	1,084	410	.....	117
.....	.....	.....	.....	.....	.....	.....	1,767	232	310	.....	118
.....	.....	.....	.....	.....	.....	73	2,027	422	88	.....	119
156	.....	.....	3,315	63	.....	198	24,674	2,057	341	.....	120
569	7,597	.....	11,000	2,351	.....	859	51,391	108	33,106	.....	121
.....	.....	.....	.....	.....	.....	.....	496	591	734	.....	122
.....	213	.....	3,300	166	.....	61	12,536	4,864	1,962	.....	123
.....	.....	.....	.....	.....	.....	51	2,274	256	682	.....	124
83	215	.....	5,636	215	.....	415	21,084	2,222	13	.....	125
.....	4,331	.....	.....	1,148	.....	55	33,360	9,927	61	.....	126
.....	399	.....	500	225	.....	324	28,853	743	10,227	.....	127
.....	.....	.....	171	204	.....	137	15,208	.....	615	.....	128
48	110	.....	1,500	230	.....	38	11,594	1,787	216	.....	129
646	6,279	.....	1,473	1,655	.....	209	43,544	9,402	18,516	.....	130
530	635	.....	5,550	294	.....	58	25,687	2,097	.....	.....	131
310	.....	.....	.....	59	.....	87	4,505	428	2,236	.....	132
.....	327	.....	1,633	462	.....	345	20,383	1,140	94	.....	133
.....	.....	.....	500	15	.....	98	3,702	2,290	1,271	.....	134
.....	.....	1,846	1,300	427	.....	288	19,551	1,047	845	.....	135
320	.....	.....	2,500	328	.....	231	20,381	1,232	11	.....	136
.....	.....	.....	200	4	.....	322	7,096	1,168	373	.....	137
101	.....	.....	.....	18	.....	25	2,646	251	2,231	.....	138
.....	.....	.....	.....	.....	.....	54	3,917	472	7	.....	139
494	2,272	.....	1,500	416	.....	188	31,729	5,163	2,838	.....	140
250	.....	.....	200	176	.....	27	2,790	378	1,410	.....	141
.....	.....	.....	800	16	.....	3	6,694	1,921	1,695	.....	142
4	1,376	.....	.....	183	.....	21	14,379	3,267	24	.....	143
.....	.....	.....	568	3	.....	183	11,285	911	.....	.....	144
70	645	500	2,300	1,159	.....	145	12,420	25	5,663	2,391	145
.....	.....	.....	473	66	.....	293	18,986	.....	4,359	.....	146
850	.....	.....	1,500	437	.....	155	18,185	836	32	.....	147
323	1,486	.....	.....	310	.....	658	23,700	.....	9,236	.....	148
173	.....	.....	1,700	114	.....	90	14,014	1,662	.....	.....	149
213	.....	.....	1,500	170	.....	171	15,748	1,028	49	.....	150
.....	.....	.....	3,024	396	.....	13	25,578	.....	4,090	6,799	151
350	2,094	.....	9,500	1,202	.....	268	32,668	526	1,042	.....	152
707	3,297	1,040	.....	2,416	.....	46	31,576	10,290	164	223	153
.....	.....	.....	100	6	.....	80	4,639	683	.....	.....	154
.....	.....	.....	171	1	.....	19	4,797	38	152	.....	155
228	.....	.....	1,196	76	.....	1.	5,315	.....	2,906	.....	156

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31st, 1905.			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
105. Cockburn Island	.....	1,000	.....	3,348
106. Colborne	.....	1,500	.....	4,230
107. Colchester, N	.....	1,200	7,960	26,054
108. Colchester, S	.....	3,075	3,907	36,189
109. Collingwood	.....	1,500	1,210	4,735
110. Cornwall	.....	3,600	2,882	14,264
111. Cramahe	.....	4,700	.....	6,224
112. Crosby, N	.....	500	4,409	9,370
113. Crosby, S	3,863	1,400	.....	5,729
114. Crowland	.....	725	.....	2,543
115. Culross	.....	185	976	2,910
116. Cumberland	.....	5,725	2,537	20,725
117. Dalhousie	.....	800	.....	2,294
118. Dalton	.....	.....	.....	542
119. Darling	200	60	.....	770
120. Darlington	.....	650	1,360	4,408
121. Dawn	.....	1,350	26,905	61,469
122. Day and Bright	.....	.....	.....	1,325
123. Delaware	.....	1,520	.....	8,346
124. Denbigh, Abinger and Ashby	.....	.....	.....	938
125. Derby	.....	2,200	3,345	7,780
126. Dereham	.....	400	2,829	13,217
127. Dorchester, N	.....	.....	.....	10,970
128. Dorchester, S	.....	725	3,737	5,077
129. Douro	.....	400	1,482	3,885
130. Dover	.....	1,000	10,583	39,501
131. Downie	111	800	.....	3,008
132. Draper	.....	250	765	3,679
133. Drummond	7,895	800	.....	9,929
134. Drury, Denison and Graham	.....	450	300	4,311
135. Dumfries, N	.....	1,000	.....	2,892
136. Dumfries, S	.....	890	5,345	7,478
137. Dummer	.....	1,000	.....	2,541
138. Dungannon	252	200	200	3,134
139. Dunn	.....	1,000	.....	1,479
140. Dunwich	.....	350	1,852	10,203
141. Dymond	700	.....	1,857	4,345
142. Dysart	.....	2,540	.....	6,156
143. Easthope, N	.....	680	.....	3,971
144. Easthope, S	.....	130	2,028	3,069
145. Eastnor	325	2,225	1,310	11,939
146. Edwardsburg	17,877	.....	390	22,626
147. Egremont	.....	.....	8,471	9,339
148. Ekfrid	.....	850	2,312	12,398
149. Elderslie	.....	1,500	4,105	7,267
150. Eldon	.....	125	3,314	4,516
151. Elizabethtown	.....	2,000	541	13,430
152. Ellice	.....	.....	10,178	11,746
153. Elma	.....	.....	*62,503	73,180
154. Elmsley, N	.....	400	.....	1,083
155. Elmsley, S	.....	500	.....	690
156. Elzevir	.....	2,622	1,700	7,228

* Including $59,520 advances on drainage works.

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31st, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
										105
2,556									2,556	106
1,162	1,289		1,600	35,057	1,267	5,500		2,356	51,231	107
2,433	1,124	3,189	1,855	40,204	128	6,000		13,026	67,959	108
			1,161		1,197			165	2,523	109
			1,283	15,896		6,404		1,021	24,604	110
								75	75	111
841	52	2,500	4,409			233	2,507		10,542	112
						420	840		1,260	113
	1,600							25	1,625	114
			877					239	1,116	115
2,062	2,834		2,387	9,073	1,944	1,000		2,010	21,310	116
					1,660				1,660	117
								213	213	118
	65							48	113	119
			510					163	673	120
2,486	8,129		2,923	30,756	606	5,000		3,540	53,440	121
	810								810	122
2,730				751		3,000			6,481	123
	224								224	124
			557	2,485		2,558			5,600	125
				23,884				6,238	30,122	126
5,768				4,497					10 265	127
2,828						303		1,595	4,726	128
			1,452	3,162				229	4,843	129
3,400	1,132		2,475	48,933				715	56,655	130
				4,187				130	4,317	131
	1,326		760						2,086	132
				9,406					9,406	133
	1,545							212	1,757	134
					8,154	1,600		100	9,854	135
			5,345						5,345	136
								10	10	137
	1,991		200						2,191	138
										139
5,170	644		227	8,642				737	15,420	140
	771		1,688			700		23	3,182	141
	1,964							1	1,965	142
				3,164					3,164	143
										144
	1,877		1,310	11,139	500	5,881		99	20,806	145
						4,694		145	4,839	146
			8,471						8,471	147
5,644			1,611	5,674		413		1,220	14,562	148
			4,105					90	4,195	149
1,035			3,314					287	4,636	150
		7,000				2,305			9,305	151
			2,603	10,664		5,500			18,767	152
	38	11,033	2,983	40,507				6,782	61,343	153
										154
						400			400	155
652			1,615			1,348			3,615	156

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1905. Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
157. Emily, Victoria	995	12,455	....	.....	.....	.....	1,200
158. Emo, Rainy River	591	3,586	201	28	.....	250	900
159. Enniskillen, Lambton	3,896	35,440	30	7	572	.....	.....
160. Ennismore, Peterborough	204	2,856	....	.....	.....	.....	300
161. Eramosa, Wellington	359	20,509	171	6	10	.....	.....
162. Erin, Wellington	88	16,057	122	.....	.....	.....	.....
163. Ernestown, Lennox and Addington	9	14,542	55	3	1,014	11,004	.....
164. Esquesing, Halton	2,329	17,515	182	8	1,661	2,624	.....
165. Essa, Simcoe	720	17,610	56	.....	.....	.....	3,592
166. Etobicoke, York	4,377	28,768	248	6	579	6,367	3,500
167. Euphemia, Lambton	382	11,855	106	5	24	.....	3,763
168. Euphrasia, Grey	2,152	15,268	....	13	26	.....	.....
169. Evanturel, Nipissing	137	472	....	53	.....	.....	.....
170. Faraday, Hastings	.....	4,232	....	12	.....	.....	.....
171. Fenelon, Victoria	389	9,643	....	.....	.....	.....	400
172. Ferris, Nipissing	275	2,497	....	50	.....	.....	.....
173. Finch, Stormont	2,202	25,083	373	12	89	.....	9,323
174. Fitzroy, Carleton	1,398	11,517	36	2	.....	.....	.....
175. Flamboro E., Wentworth	2,887	14,050	114	26	39	.....	.....
176. Flamboro W., Wentworth	1,881	15,782	148	258	630	98	2,150
177. Flos, Simcoe	9,464	20,021	97	17	318	.....	.....
178. Foley, Parry Sound	1,260	1,319	93	.....	.....	.....	.....
179. Fredericksburg N., Lennox and Add.	899	7,706	....	.....	105	.....	500
180. Fredericksburg S., Lennox and Add.	158	5,863	....	.....	48	.....	.....
181. Fullarton, Perth	948	17,590	20	4	.....	.....	4,000
182. Gainsborough, Lincoln	343	9,970	....	9	.....	.....	800
183. Galway and Cavendish, Peterborough	439	1,585	....	.....	.....	.....	.....
184. Garafraxa E., Dufferin	1,061	10,201	....	.....	.....	.....	1,500
185. Garafraxa W., Wellington	94	12,339	....	1	4	.....	4,000
186. Georgina, York	342	6,274	40	.....	.....	.....	700
187. Glamorgan, Haliburton	27	1,221	22	6	.....	.....	.....
188. Glanford, Wentworth	107	8,294	....	65	364	.....	1,000
189. Glenelg, Grey	2,176	10,223	32	14	30	.....	500
190. Gloucester, Carleton	113	26,445	670	261	.....	3	4,000
191. Goderich, Huron	2,162	14,379	....	.....	.....	.....	3,400
192 Gordon, Manitoulin	998	2,167	3	.....	.....	50	.....
193. Gosfield N., Essex	1,003	16,202	....	12	76	.....	5,829
194. Gosfield S., Essex	187	18,021	27	.....	54	.....	14,631
195. Goulbourn, Carleton	3,438	8,731	48	.....	275	.....	1,937
196. Gower N., Carleton	1,525	11,340	76	.....	.....	231	980
197. Gower S., Grenville	766	5,855	5	.....	.....	.....	375
198. Grantham, Lincoln	1,469	9,798	24	15	36	.....	.....
199. Grattan, Renfrew	1,139	1,564	....	.....	.....	.....	.....
200. Greenock, Bruce	1,681	12,199	199	6	35	262	3,375
201. Grey, Huron	112	23,421	56	9	916	20,557	.....
202. Griffith and Matawatchan, Renfrew	53	983	....	.....	.....	.....	.....
203. Grimsby N., Lincoln	23	10,199	....	135	.....	.....	.....
204. Grimsby S., Lincoln	1,973	8,106	108	2	.....	.....	.....
205. Guelph, Wellington	.....	12,735	37	2	1,060	3,900	3,900
206. Gwillimbury E., York	1,597	14,723	87	1	531	432	.....
207. Gwillimbury N., York	450	6,855	53	.....	.....	.....	.....
208. Gwillimbury W., Simcoe	672	11,926	....	.....	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	49	14,699	841	2	140	2,002	.....	157
500	.....	.....	.....	.....	.....	6,056	436	.....	134	1,075	252	158
.....	7,617	.....	.....	.....	*2,049	49,611	2,539	292	594	6,765	.....	159
.....	.....	.....	.....	.....	27	3,387	266	89	38	255	.....	160
.....	.....	.....	.....	61	85	21,201	761	97	167	3,829	.....	161
1,600	.....	.....	.....	.....	.....	17,867	800	17	163	1,876	.....	162
.....	.....	.....	.....	.....	3	26,630	715	.....	261	3,219	.....	163
.....	.....	.....	.....	.....	30	24,349	1,101	27	372	7,209	.....	164
.....	.....	.....	.....	.....	32	22,010	992	18	172	5,188	.....	165
.....	.....	1,508	.....	.....	1,331	46,684	1,882	74	666	11,373	.....	166
.....	1,515	4,024	25	.....	337	22,036	753	103	261	9,314	.....	167
.....	.....	.....	.....	.....	29	17,488	830	85	254	2,410	1,000	168
.....	.....	.....	.....	.....	1	663	.....	.....	35	16	.....	169
500	.....	.....	.....	210	199	5,153	289	72	68	552	.....	170
.....	.....	.....	.....	.....	199	10,631	523	15	112	1,591	.....	171
.....	.....	.....	.....	.....	28	2,850	557	16	197	149	.....	172
.....	7,529	.....	.....	.....	832	45,443	360	55	448	11,668	.....	173
.....	.....	.....	.....	.....	82	13,035	804	906	167	3,149	.....	174
.....	.....	.....	.....	.....	3	17,119	854	.....	265	3,116	.....	175
.....	.....	.....	.....	.....	190	21,137	936	24	416	2,991	.....	176
.....	2,788	3,500	100	.....	383	36,688	1,110	.....	530	5,013	.....	177
.....	.....	.....	.....	.....	27	2,699	244	14	58	259	.....	178
.....	.....	.....	.....	.....	35	9,245	369	37	112	1,929	.....	179
.....	.....	.....	.....	.....	.....	6,069	285	.....	60	834	.....	180
.....	.....	.....	.....	329	122	23,013	635	.....	199	4,485	.....	181
.....	.....	.....	.....	.....	157	11,279	580	.....	212	2,462	.....	182
.....	.....	.....	.....	75	49	2,148	195	.....	68	41	.....	183
.....	.....	.....	.....	.....	37	12,799	584	9	181	2,329	.....	184
.....	.....	.....	.....	.....	67	16,505	730	24	217	4,226	.....	185
.....	.....	.....	.....	.....	3	7,359	439	.....	82	1,648	.....	186
.....	.....	.....	.....	.....	218	1,494	307	.....	84	198	.....	187
.....	.....	.....	.....	.....	16	9,846	592	36	239	470	296	188
.....	.....	.....	.....	.....	302	13,277	764	1	326	2,743	.....	189
2,800	.....	.....	.....	.....	295	34,587	2,059	112	548	6,211	.....	190
.....	.....	.....	.....	.....	3	19,944	618	57	180	2,707	.....	191
.....	.....	.....	.....	.....	31	3,249	250	.....	45	663	.....	192
.....	8,589	.....	103	.....	1,379	33,193	718	1,395	401	1,342	50	193
.....	1,206	.....	.....	.....	100	34,226	801	1,628	277	3,766	.....	194
.....	.....	.....	.....	.....	201	14,630	1,017	.....	107	3,666	.....	195
.....	.....	.....	.....	.....	873	15,025	655	.....	160	3,542	.....	196
.....	.....	.....	.....	.....	49	7,050	246	.....	149	296	.....	197
.....	.....	.....	.....	.....	4	11,346	639	56	147	923	60	198
.....	.....	.....	.....	.....	.....	2,703	333	.....	82	297	22	199
.....	.....	5,000	.....	250	344	23,351	801	39	404	7,099	.....	200
.....	8,232	35,000	.....	.....	235	88,538	931	239	267	16,105	.....	201
.....	.....	555	.....	75	.....	1,666	289	10	100	95	.....	202
.....	.....	.....	.....	.....	7	10,364	490	11	170	1,404	.....	203
.....	.....	.....	.....	.....	.....	10,189	422	251	134	1,507	.....	204
.....	.....	.....	.....	.....	111	21,715	908	17	308	3,709	.....	205
.....	.....	.....	.....	.....	529	17,900	781	.....	227	3,249	.....	206
.....	.....	.....	.....	.....	.....	7,358	452	.....	118	678	.....	207
.....	.....	.....	.....	.....	.....	12,598	694	.....	139	1,533	.....	208

* Including $1,948 share of drainage debt from other municipalities.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1805.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
157. Emily	27	308	3,260	5,636			
158. Emo	5	18		2,536			
159. Enniskillen	113	676	3,739	10,995	12,496		
160. Ennismore	4	10	1,097	1,270			
161. Eramosa	46	70	3,501	6,598			
162. Erin	22	20	4,316	9,342			
163. Ernestown	25	171	4,461	6,569			11,004
164. Esquesing	60	650	2,931	8,115			2,493
165. Essa	54	303	5,108	6,647			
166. Etobicoke	192	256	3,555	9,233		175	6,084
167. Euphemia	20	40	2,681	3,654	902		
168. Euphrasia	231	153	2,553	7,586			
169. Evanturel				159			
170. Faraday	36	11	259	2,451			
171. Fenelon	25	135	2,086	4,994			
172. Ferris	12			996			
173. Finch	88	194	1,767	4,434	4,774		
174. Fitzroy	8	100	2,236	4,782			
175. Flamboro E	99	225	4,885	5,103			
176. Flamboro W	107	752	4,410	5,668	1		107
177. Flos	45	57	3,994	8,084	1,902	142	
178. Foley		68		726			
179. Fredericksburg N	24	314	2,031	2,940			
180. Fredericksburg S		91	2,061	2,465			39
181. Fullarton	25	66	4,110	4,471	3,851		
182. Gainsborough	32		1,861	4,960			
183. Galway and Cavendish		5	616	1,060			
184. Garafraxa E	62	10	1,667	5,027	29		
185. Garafraxa W	52	15	3,544	2,778	265		
186. Georgina	51	10	1,435	2,935			
187. Glamorgan	15		120	745			
188. Glanford	79	102	3,341	3,199			
189. Glenelg	39	34	1,537	5,071			
190. Gloucester	195		4,017	14,201	165		
191. Goderich	10	5	2,672	4,467			
192. Gordon	2	20		1,378			
193. Gosfield N	50	179	1,580	4,126	13,441		
194. Gosfield S	30	87	2,143	5,383	4,135		
195. Goulbourn	24	40	2,386	5,677			
196. Gower N		164	1,712	4,358	504		947
197. Gower S		3	878	1,477	2,507		464
198. Grantham	18		3,770	3,872	22		
199. Grattan	22	14	409	1,196			
200. Greenock	269		2,630	5,560			171
201. Grey	54	67	3,183	6,224	12,454		40,650
202. Griffith and Matawatchan	94		50	808			
203. Grimsby N	17	20	2,511	2,583			
204. Grimsby S	29	10	1,338	3,682			
205. Guelph	131	117	3,209	4,400			3,900
206. Gwillimbury E	30	56	3,096	7,812			432
207. Gwillimbury N	14	8	1,597	3,452			
208. Gwillimbury W	10	226	3,780	5,383			

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.

Disbursements, 1905.—*Continued.*								Assets on December 31, 1905				
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
110	.....	195	1,200	90	.....	8	13,819	880	.....	.....	157
153	.....	.....	900	100	.....	102	5,711	345	2,831	.....	158
50	6,063	.....	.....	976	.....	1,485	46,783	2,828	32,490	.....	159
.....	.....	.....	300	14	....	11	3,354	33	798	.....	160
.....	.....	.....	398	23	.....	124	15,614	5,587	2,554	.....	161
590	.....	.....	.....	36	.....	34	17,216	651	1,674	.....	162
.....	.....	.....	.....	.....	.....	173	26,598	32	3,672	.....	163
.....	.....	.....	.....	.....	.....	305	23,263	1,086	338	13,888	164
153	.....	.....	3,200	124	.....	51	22,010	.....	983	.....	165
1,159	.....	500	3,500	805	.....	1,114	40,568	6,116	4,419	175	166
.....	.....	1,024	2,710	203	.....	371	22,036	.....	8,411	.....	167
129	.....	.....	.....	13	.....	97	15,341	2,147	932	.....	168
.....	.....	.....	.....	.....	.....	.....	210	453	996	.....	169
238	.....	.....	232	214	.....	15	4,437	716	2,089	.....	170
263	.....	.....	400	181	.....	74	10,402	229	5,230	.....	171
88	.....	.....	181	52	.....	1	2,249	601	2,446	.....	172
230	3,583	.....	14,975	2,493	.....	374	45,443	.....	1,738	.....	173
.....	.....	.....	.....	.....	.....	39	12,191	844	8,410	.....	174
.....	.....	.....	.....	.....	.....	226	14,773	2,346	2,360	.....	175
.....	.....	.....	3,750	79	.....	8	19,249	1,888	1,330	15,256	176
283	523	1,133	1,258	.....	88	83	24,245	12,443	3,173	1,715	177
.....	.....	.....	.....	.....	.....	.....	1,369	1,330	445	.....	178
.....	.....	.....	500	15	.....	6	8,277	968	2,022	.....	179
.....	.....	.....	.....	3	.....	118	5,956	113	3,188	.....	180
.....	.....	.....	4,000	162	.....	267	22,271	742	.....	.....	181
.....	.....	.....	800	17	.....	172	11,096	183	875	.....	182
.....	.....	.....	.....	.....	.....	62	2,047	101	133	.....	183
.....	.....	506	1,500	142	.....	24	12,070	729	.....	.....	184
126	.....	.....	4,016	143	.....	126	16,262	243	11,986	.....	185
.....	.....	.....	700	19	.....	30	7,349	10	24	.....	186
.....	.....	.....	.....	.....	.....	18	1,487	7	2,034	.....	187
.....	.....	.....	.....	.....	.....	68	8,422	1,424	65	.....	188
.....	.....	.....	500	5	.....	16	11,036	2,241	.....	.....	189
485	889	129	4,000	718	.....	74	33,803	784	28,119	.....	190
648	.....	.....	3,400	159	.....	42	14,965	4,979	44	.....	191
86	.....	.....	.....	52	.....	89	2,585	664	1,079	.....	192
351	4,472	.....	2,829	1,804	.....	337	33,075	118	11,644	.....	193
.....	2,361	1,042	11,200	1,006	.....	337	34,196	30	13,893	.....	194
.....	.....	.....	1,500	32	.....	130	14,579	51	6,178	.....	195
.....	823	.....	439	175	.....	54	13,533	1,492	2,240	.....	196
.....	.....	.....	.....	.....	.....	38	6,058	992	742	.....	197
.....	.....	.....	.....	.....	.....	300	9,807	1,539	738	.....	198
110	.....	.....	.....	11	.....	51	2,547	156	2,222	.....	199
167	.....	.....	3,375	19	.....	134	20,668	2,683	75	.....	200
.....	2,309	.....	3,000	2,109	249	697	88,538	.....	4,457	.....	201
.....	.....	.....	100	.....	.....	86	1,632	34	572	.....	202
107	164	.....	1,050	197	.....	308	9,032	1,332	1,477	.....	203
88	.....	288	.....	159	.....	114	8,022	2,167	158	.....	204
.....	.....	.....	4,159	532	.....	63	21,453	292	8,134	.....	205
.....	.....	.....	.....	82	.....	296	16,061	1,839	139	....	206
500	.....	.....	.....	113	.....	77	7,009	349	90	.....	207
.....	.....	.....	.....	.....	.....	227	11,992	606	1,134	.....	208

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
157. Emily	.....	350	114	1,344
158. Emo	.....	1,300	2,150	6,626
159. Enniskillen	.....	700	26,560	62,578
160. Ennismore	.....	1,200	.....	2,031
161. Eramosa	.....	.....	28	8,169
162. Erin	.....	.....	1,302	3,627
163. Ernestown	23,100	800	150	27,754
164. Esquesing	25,404	250	.....	40,966
165. Essa	.....	.....	1,112	2,095
166. Etobicoke	13,117	1,150	10,972	35,949
167. Euphemia	.....	600	1,325	10,336
168. Euphrasia	.....	1,000	196	4,275
169. Evanturel	.....	.....	.....	1,449
170. Faraday	.....	400	890	4,095
171. Fenelon	.....	125	2,639	8,223
172. Ferris	.....	240	482	3,769
173. Finch	.....	600	10,212	12,550
174. Fitzroy	.....	1,200	.....	10,454
175. Flamboro E	.....	2,000	153	6,859
176. Flamboro W	107	4,500	.....	23,081
177. Flos	.....	140	3,446	20,917
178. Foley	.....	110	.....	1,885
179. Fredericksburg N	3,500	400	.....	6,890
180. Fredericksburg S	1,341	800	.....	5,442
181. Fullarton	.....	800	877	2,419
182. Gainsborough	.....	250	219	1,527
183. Galway and Cavendish	.....	.....	100	334
184. Garafraxa E	.....	.....	.....	729
185. Garafraxa W	.....	.....	2,001	14,230
186. Georgina	.....	150	.....	184
187. Glamorgan	.....	.....	140	2,181
188. Glanford	7,000	3,730	80	12,299
189. Glenelg	.....	1,625	35	3,901
190. Gloucester	.....	5,500	4,858	39,261
191. Goderich	.....	.....	818	5,841
192. Gordon	500	.....	849	3,092
193. Gosfield N	.....	1,650	7,145	20,557
194. Gosfield S	.....	.....	4,772	18,695
195. Goulbourn	7,691	200	115	14,235
196. Gower N	1,714	1,500	.....	6,946
197. Gower S	464	.....	.....	2,198
198. Grantham	.....	.....	61	2,338
199. Grattan	.....	400	139	2,917
200. Greenock	171	.....	480	3,409
201. Grey	40,650	1,250	185	46,542
202. Griffith and Matawatchan	.....	.....	.....	606
203. Grimsby N	.....	1,400	352	4,561
204. Grimsby S	.....	250	1,271	3,846
205. Guelph	14,000	.....	114	22,540
206. Gwillimbury E	12,974	50	.....	15,002
207. Gwillimbury N	.....	.....	2,000	2,439
208. Gwillimbury W	.....	.....	.....	1,740

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.

Liabilities on December 31, 1905.										No.
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	
$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	113	.....	1,098	.....	.....	.....	1,211	157
.....	1,786	.....	2,150	.....	.....	800	.....	.....	4,736	158
.....	382	.....	50	30,325	.....	.....	.....	782	31,539	159
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	160
3,482	2,782	.....	.....	.....	.....	.....	.....	190	6,454	161
.....	.....	.....	1,280	.....	.....	.....	.....	.....	1,280	162
2,742	95	.....	.....	.....	.....	.....	.....	.....	2,837	163
.....	.....	.....	.....	.....	.....	.....	.....	304	304	164
.....	.....	.....	1,076	.....	.....	392	.....	280	1,748	165
.....	.....	.....	10,954	.....	5,188	.....	.....	484	16,626	166
1,722	1,189	.....	.....	1,515	7,976	3,825	.....	730	16,957	167
.....	.....	.....	136	.....	.....	.....	.....	100	236	168
.....	33	.....	.....	.....	.....	.....	.....	75	108	169
173	1,508	.....	823	.....	2,700	.....	.....	75	5,279	170
2,162	1,881	.....	2,639	.....	.....	.....	.....	.....	6,682	171
.....	1,898	.....	482	.....	.....	69	.....	43	2,492	172
1,741	1,961	.....	260	27,667	.....	9,095	.....	5,399	46,123	173
2,236	2,130	.....	.....	.....	.....	.....	.....	.....	4,366	174
.....	2,900	.....	.....	.....	.....	.....	.....	.....	2,900	175
.....	.....	.....	.....	.....	.....	1,438	.....	.....	1,438	176
4,560	2,978	13,118	3,418	8,462	3,500	.....	.....	2,072	38,108	177
.....	579	.....	.....	.....	.....	.....	.....	.....	579	178
2,200	329	.....	.....	.....	.....	.....	.....	.....	2,529	179
2,233	.....	.....	.....	.....	.....	.....	.....	.....	2,233	180
.....	.....	.....	.....	.....	.....	1,500	.....	.....	1,500	181
1,329	.....	.....	.....	.....	.....	.....	.....	55	1,384	182
.....	1,215	.....	.....	.....	.....	.....	.....	216	1,431	183
.....	.....	.....	.....	.....	2,254	.....	.....	.....	2,254	184
3,524	5,426	.....	1,189	.....	.....	1,100	.....	395	11,634	185
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	186
118	822	.....	113	.....	.....	.....	.....	162	1,215	187
.....	.....	.....	.....	.....	.....	.....	.....	268	268	188
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	189
4,069	12,141	.....	4,725	4,622	920	5,022	.....	400	31,899	190
3,808	.....	.....	619	.....	.....	.....	.....	.....	4,427	191
.....	550	.....	849	.....	.....	315	.....	.....	1,714	192
1,580	416	.....	1,164	39,448	.....	3,000	.....	341	45,949	193
2,143	174	2,233	.....	16,365	.....	8,450	.....	2,393	31,758	194
2,386	125	.....	.....	.....	.....	2,371	.....	578	5,460	195
.....	.....	.....	.....	2,719	.....	541	.....	.....	3,260	196
877	.....	.....	.....	.....	.....	375	.....	.....	1,252	197
.....	317	.....	.....	.....	.....	.....	.....	100	417	198
534	372	.....	114	.....	.....	.....	.....	.....	1,020	199
.....	.....	.....	176	.....	5,000	.....	.....	75	5,251	200
1,823	.....	.....	.....	54,728	35,000	.....	.....	85	91,636	201
190	155	.....	.....	.....	555	.....	.....	.....	900	202
2,886	.....	.....	352	1,345	.....	.....	.....	31	4,614	203
.....	.....	1,668	1,271	.....	.....	.....	.....	35	2,974	204
3,191	.....	.....	.....	.....	.....	.....	3,961	200	7,352	205
.....	.....	.....	.....	.....	.....	.....	1,851	.....	1,851	206
.....	.....	.....	2,000	.....	.....	.....	.....	.....	2,000	207
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	208

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1905. Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
209. Hagarty, Jones, etc., Renfrew	529	6,124	152	25	30	.....	.....
210. Hagerman, Parry Sound	439	1,247	28	.....	.....	.....	.....
211. Haldimand, Northumberland	963	17,277	24	85	31	.....	2,500
212. Hallam, Algoma	1,635	2,485	155	160	.....	.....	.....
213. Hallowell, Prince Edward	.....	13,163	....	27	.....	.....	.....
214. Hamilton, Northumberland	1,570	16,789	153	2	.....	.....	1,000
215. Hanmer, Nipissing	34	1,097	2	.....	.....	.....	900
216. Harley, Nipissing	60	1,315	....	.....	.....	.....	787
217. Harvey, Peterborough	.....	4,771	...	12	.....	.....	.....
218. Harwich, Kent	5,993	35,547	10	15	397	.....	6,000
219. Hawkesbury, E., Prescott	.....	13,497	192	4	.....	.....	1,784
220. Hawkesbury, W., Prescott	2,261	8,322	....	146	.....	.....	.....
221. Hay, Huron	14	18,729	100	25	38	850	1,120
222. Head, Clara and Maria, Renfrew	17	690	167	.....	.....	.....	.....
223. Hibbert, Perth	6,972	16,070	65	20	165	.....	.....
224. Hillier, Prince Edward	181	7,283	20	.....	5	.....	533
225. Hilton, Algoma	1,278	1,805	23	.....	11	.....	376
226. Himsworth, N., Parry Sound	781	2,068	90	9	.....	.....	.....
227. Himsworth, S., Parry Sound	1,052	3,587	84	7	.....	.....	250
228. Hinchinbrooke, Frontenac	859	5,681	60	18	.....	.....	.....
229. Holland, Grey	912	8,546	80	18	.....	.....	.....
230. Hope, Durham	.....	14,232	55	.....	1,558	.....	1,767
231. Horton, Renfrew	5,689	4,385	....	.....	220	172	.....
232. Houghton, Norfolk	147	8,771	14	15	37	.....	1,625
233. Howard, Kent	6,284	26,029	16	.....	106	.....	1,500
234. Howe Island, Frontenac	116	1,695	....	.....	.....	.....	.....
235. Howick, Huron	3,734	21,895	99	13	338	1,077	7,200
236. Howland, Bidwell & Sheg, Manit'lin	240	2,907	78	.....	.....	670	506
237. Hudson, Nipissing	191	901	....	.....	.....	.....	350
238. Hullett, Huron	210	19,293	4	.....	22	1,000	4,000
239. Humberstone, Welland	1,393	11,383	277	12	.....	.....	.....
240. Humphrey, Parry Sound	169	2,263	96	71	.....	.....	.....
241. Hungerford, Hastings	278	14,355	116	97	.....	.....	.....
242. Huntingdon, Hastings	.....	8,354	....	.....	25	.....	1,238
243. Huntley, Carleton	2,416	10,803	56	.....	.....	.....	500
244. Huron, Bruce	2,447	14,446	294	28	62	.....	.....
245. Innisfil, Simcoe	3,661	20,230	76	1	110	1,223	.....
246. Jocelyn, Algoma	545	1,264	....	.....	13	.....	100
247. Johnston, Tarbutt, etc., Algoma	973	3,505	....	.....	.....	.....	500
248. Joly, Parry Sound	122	889	....	.....	.....	.....	40
249. Kaladar & Anglesea, Lennox & Add.	27	2,472	24	3	.....	.....	.....
250. Keewatin, Rainy River	761	7,203	645	22	224	.....	4,158
251. Kennebec, Frontenac	288	3,403	26	1	.....	.....	.....
252. Kenyon, Glengarry	.....	15,730	225	3	.....	.....	558
253. Keppel, Grey	.....	23,114	59	4	68	.....	570
254. Kerns, Nipissing	142	2,956	....	25	30	.....	961
255. Kincardine, Bruce	104	16,775	45	.....	50	280	1,200
256. King, York	388	28,184	307	10	1,437	494	7,625
257. Kingston, Frontenac	8,584	14,900	121	3	120	.....	.....
558. Kinloss, Bruce	2,141	9,682	24	13	23	.....	.....
259. Kitley, Leeds	1,492	9,624	92	31	20	.....	.....
260. Korah, Algoma	1,334	3,967	....	16	.....	.....	1,996

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	98	6,958	512	.....	185	538	.....	209
.....	.....	.....	.....	.....	164	1,878	229	.....	64	206	.....	210
.....	.....	.....	.....	.....	18	20,898	975	247	392	2,887	1,043	211
.....	.....	.....	.....	.....	2	4,437	341	20	136	678	40	212
.....	.....	.....	.....	.....	19	13,209	394	.....	296	1,036	.....	213
.....	.....	.....	.....	10	204	19,728	952	338	277	4,712	.....	214
.....	.....	.....	.....	.....	.....	2,033	443	.....	46	152	.....	215
.....	.....	.....	.....	.....	.....	2,162	283	2	76	552	.....	216
.....	.....	.....	.....	.....	37	4,820	412	.....	74	119	.....	217
.....	14,844	.....	138	300	101	63,345	2,152	519	763	7,138	350	218
600	.....	.....	.....	.....	24	16,101	499	1	151	2,411	.....	219
.....	.....	.....	.....	.....	723	11,452	327	.....	80	3,757	80	220
.....	.....	.....	.....	.....	249	21,125	634	416	.....	3,538	.....	221
.....	.....	.....	.....	.....	.....	874	203	10	58	19	.....	222
.....	11,906	.....	128	330	19	35,675	743	15	104	3,575	.....	223
.....	.....	.....	.....	.....	63	8,085	397	.....	133	355	.....	224
.....	.....	.....	.....	.....	.....	3,493	241	.....	84	652	329	225
.....	.....	.....	.....	.....	81	3,029	300	1	80	632	.....	226
.....	.....	.....	.....	.....	.....	4,980	461	.....	136	378	.....	227
.....	.....	.....	.....	.....	66	6,684	371	.....	125	658	.....	228
.....	.....	.....	.....	.....	320	9,876	784	15	218	1,998	175	229
.....	.....	.....	.....	.....	11	17,623	936	160	275	1,995	.....	230
.....	.....	.....	.....	.....	27	10,493	343	.....	97	662	.....	231
.....	.....	.....	.....	.....	54	10,663	659	5	163	2,085	.....	232
.....	10,042	.....	48	.....	957	44,982	1,381	397	388	7,938	.....	233
.....	.....	.....	.....	.....	.....	1,811	109	.....	30	40	.....	234
....	.....	400	.....	.....	117	34,873	1,083	29	263	7,760	401	235
.....	.....	.....	.....	.....	4	4,405	347	173	94	230	47	236
.....	.....	.....	.....	.....	2	1,444	183	.....	59	152	.....	237
.....	.....	.....	.....	.....	265	24,794	813	83	184	6,343	.....	238
.....	.....	.....	.....	.....	21	13,086	772	22	255	1,185	776	239
.....	.....	.....	.....	.....	22	2,621	209	23	112	609	.....	240
.....	.....	.....	.....	.....	240	15,086	917	51	241	1,075	178	241
.....	.....	.....	.....	.....	12	9,629	563	9	106	432	.....	242
8,000	.....	.....	.....	66	.....	21,841	1,137	4	198	3,141	.....	243
.....	.....	.....	.....	391	402	18,070	987	16	199	4,124	.....	244
.....	.....	.....	.....	.....	371	25,672	1,143	100	325	3,593	.....	245
.....	.....	.....	.....	.....	325	2,247	219	.....	53	501	225	246
.....	.....	.....	.....	.....	2	4,980	389	10	215	644	.....	247
.....	.....	.....	.....	.....	.....	1,051	161	.....	49	175	.....	248
.....	.....	.....	.....	.....	189	2,715	195	.....	175	236	.....	249
.....	.....	.....	.....	.....	200	13,213	1,089	172	1,051	1,431	476	250
.....	.....	.....	.....	.....	35	3,753	363	.....	139	192	.....	251
.....	106	.....	.....	31	80	16,733	776	44	218	3,402	.....	252
.....	2,276	.....	.....	.....	1,560	27,651	1,105	13	215	3,900	.....	253
750	.....	.....	.....	.....	67	4,931	338	.....	71	772	.....	254
4,600	.....	.....	.....	.....	236	23,290	795	9	206	2,965	38	255
.....	.....	.....	.....	.....	79	38,524	1,471	486	355	13,919	.....	256
.....	.....	.....	.....	.....	.....	23,728	682	8	237	1,760	.....	257
1,500	.....	.....	.....	8	28	13,419	618	.....	166	1,906	.....	258
.....	.....	.....	.....	.....	343	11,602	496	.....	304	2,868	.....	259
.....	.....	.....	.....	.....	35	7,348	583	1	140	1,645	102	260

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1905.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer and levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
209. Hagarty, Jones, etc.	157	95	500	4,196	.....	30	.....
210. Hagerman	10	14	.....	1,311	.....	.....	.....
211. Haldimand	150	210	3,308	7,987	.....	.....	.....
212. Hallam	46	.....	.....	1,150	.....	.....	.....
213. Hallowell	129	674	.....	6,685	.....	.....	.....
214. Hamilton	80	159	3,960	7,333	.....	.....	.....
215. Hanmer	.....	.....	.....	647	.....	.....	.....
216. Harley	47	6	.....	419	.....	.....	.....
217. Harvey	55	330	563	2,756	.....	.....	.....
218. Harwich	207	352	12,302	11,077	10,758	.....	.....
219. Hawkesbury, E.	114	5	2,094	8,847	.....	.....	.....
220. Hawkesbury, W.	38	10	891	3,104	31	.....	.....
221. Hay	62	25	3,474	7,451	635	.....	681
222. Head, Clara and Maria	.....	5	46	386	.....	.....	.....
223 Hibbert	35	63	4,129	4,461	9,633	.....	.....
224. Hillier	8	431	1,788	4,519	.....	.....	.....
225. Hilton	.....	29	.....	625	.....	128	.....
226. Himsworth, N.	26	6	.....	1,360	.....	.....	.....
227. Himsworth, S.	29	25	.....	2,022	.....	.....	.....
228. Hinckinbrooke	34	30	1,654	2,884	.....	.....	.....
229. Holland	383	139	.....	6,137	.....	.....	.....
230. Hope	60	450	4,002	7,026	.....	.....	.....
231. Horton	.....	70	820	2,285	.....	.....	12
232. Houghton	15	32	1,829	3,559	.....	.....	.....
233. Howard	49	105	3,993	6,518	9,564	.....	.....
234. Howe Island	.....	.....	.....	1,112	.....	.....	.....
235. Howick	259	12	3,088	7,553	98	2,074	.....
236. Howland, Bidwell and Sheg.	.....	5	.....	2,216	.....	.....	.....
237. Hudson	7	5	.....	515	.....	.....	.....
238. Hullett	20	17	4,078	6,227	96	.....	1,879
239. Humberstone	42	34	2,711	5,253	437	.....	.....
240. Humphrey	104	152	.....	1,088	.....	.....	.....
241. Hungerford.	226	163	4,054	7,417	.....	.....	.....
242. Huntingdon	10	97	2,923	4,358	.....	.....	.....
243. Huntley	41	.....	1,756	12,630	.....	.....	.....
244. Huron	34	182	3,414	7,539	.....	.....	694
245. Innisfil	167	410	5,400	8,325	958	.....	503
246. Jocelyn	4	.....	.....	625	.....	41	.....
247. Johnson, Tarbutt, etc.	10	5	.....	2,729	.....	.....	.....
248. Joly	.....	5	.....	292	.....	.....	.....
249. Kaladar and Anglesea	.....	.....	207	1,698	.....	.....	.....
250. Keewatin	115	68	.....	3,450	.....	.....	.....
251. Kennebec	2	121	300	1,932	.....	.....	.....
252. Kenyon	168	105	1,834	8,096	754	.....	.....
253. Keppel	29	193	1,813	12,503	1,302	194	.....
254. Kerns	100	.....	.....	1,411	.....	.....	.....
255. Kincardine	47	10	3,008	12,644	.....	.....	.....
256. King	135	70	5,935	11,934	.....	.....	.....
257. Kingston	1	136	7,046	6,664	124	.....	.....
258. Kinloss	20	34	2,260	6,270	.....	.....	.....
259. Kitley	.....	31	1,986	5,274	202	.....	383
260. Korah	.....	.....	.....	1,274	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets on December 31, 1905			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	30	144	.....	23	6,410	548	1,032	800	209
.....	.....	.....	.....	.....	.....	18	1,852	26	1,203	.....	210
.....	.....	.....	2,500	50	.....	622	20,371	527	715	.....	211
174	.....	.....	.....	138	.....	39	2,762	1,675	756	.....	212
185	.....	.....	770	244	.....	164	10,577	2,632	934	.....	213
.....	.....	.....	1,000	11	.....	279	19,101	627	3,142	.....	214
.....	.....	.....	670	23	.....	9	1,990	43	1,608	.....	215
.....	.....	.....	504	.....	.....	17	1,906	256	983	.....	216
91	.....	63	196	125	.....	8	4,792	28	2,982	.....	217
202	3,423	.....	11,000	1,176	.....	511	61,930	1,415	4,453	.....	218
219	.....	.....	1,584	97	.....	1	16,023	78	926	.....	219
300	71	958	450	506	.....	589	11,192	260	.....	.....	220
.....	2,455	.....	1,120	241	.....	392	21,124	1	609	.....	221
23	.....	.....	.....	18	.....	.....	768	106	957	.....	222
.....	1,407	.....	.....	445	.....	206	24,816	10,859	.....	.....	223
.....	.....	.....	386	5	.....	63	8,085	.....	128	.....	224
.....	.....	.....	100	51	.....	36	2,275	1,218	515	351	225
112	.....	.....	.....	47	.....	7	2,571	458	503	.....	226
302	.....	.....	450	155	.....	229	4,187	793	1,412	.....	227
.....	.....	.....	.....	.....	.....	114	5,870	814	173	.....	228
.....	.....	.....	.....	.....	.....	27	9,876	.....	4,650	.....	229
.....	.....	690	1,210	242	.....	577	17,623	.....	3,670	.....	230
.....	.....	.....	.....	.....	.....	48	4,337	6,156	1,119	.....	231
.....	.....	145	1,625	132	.....	79	10,328	335	1,266	.....	232
304	5,304	.....	1,500	834	.....	548	38,823	6,159	4,190	.....	233
.....	.....	.....	.....	.....	.....	.....	1,291	520	154	.....	234
495	.....	.....	7,200	1,195	.....	52	31,562	3,311	1,830	11,634	235
.....	.....	100	481	34	.....	94	3,821	584	258	.....	236
.....	.....	.....	350	15	.....	....	1,286	158	819	.....	237
.....	741	.....	4,000	268	.....	9	24,758	36	275	.....	238
.....	344	.....	.....	95	.....	42	11,968	1,118	921	.....	239
.....	.....	.....	.....	.....	.....	38	2,335	286	1,699	.....	240
255	.....	.....	.....	111	.....	139	14,827	259	6,269	.....	241
216	.....	.....	774	100	.....	41	9,629	.....	5,630	.....	242
.....	.....	509	500	78	.....	64	20,058	1,783	1,310	.....	243
655	.....	.....	.....	112	.....	76	18,032	38	3,298	.....	244
319	713	.....	.....	236	.....	240	22,432	3,240	1,162	.....	245
.....	.....	.....	200	58	.....	28	1,954	293	832	475	246
.....	.....	.....	515	24	.....	114	4,655	325	2,466	.....	247
.....	.....	.....	104	.....	.....	73	859	192	605	.....	248
.....	.....	.....	.....	4	.....	72	2,587	128	2,163	.....	249
174	.....	343	4,100	687	.....	57	13,213	.....	973	.....	250
.....	.....	.....	.....	.....	.....	44	3,093	660	2,942	.....	251
.....	674	.....	.....	346	.....	316	16,733	.....	8,282	.....	252
147	434	95	721	434	.....	215	23,313	4,338	2,190	1,926	253
.....	.....	.....	1,611	51	.....	54	4,408	523	1,427	.....	254
361	335	.....	1,200	223	20	229	22,090	1,200	529	.....	255
.....	.....	.....	3,364	128	.....	727	38,524	.....	4,655	30	256
.....	.....	.....	.....	.....	.....	112	16,779	6,958	4,515	.....	257
130	.....	.....	.....	27	.....	36	11,467	1,952	41	.....	258
.....	.....	.....	.....	.....	.....	42	11,586	16	9	.....	259
.....	.....	.....	3,467	72	.....	25	7,309	39	9,272	.....	260

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
209. Hagarty, Jones, etc.	1,000	52	98	3,530
210. Hagerman		685	100	2,014
211. Haldimand		3,850	110	5,202
212. Hallam		500	2,591	5,522
213. Hallowell		2,100	5,315	10,981
214. Hamilton		2,000	28	5,797
215. Hanmer				1,651
216. Harley			49	1,288
217. Harvey			485	3,495
218. Harwich		2,350	3,495	11,713
219. Hawkesbury, E.		1,250	657	2,911
220. Hawkesbury, W.		3,200	4,916	8,376
221. Hay	681	1,825	110	3,226
222. Head, Clara and Maria			277	1,340
223. Hibbert		1,025		11,884
224. Hillier		1,500		1,628
225. Hilton		1,040	649	3,773
226. Himsworth, N.		242	667	1,870
227. Himsworth, S.			2,225	4,430
228. Hinchinbrooke		1,000		1,987
229. Holland		475		5,125
230. Hope	30,840	500		35,010
231. Horton	1,140	1,275		9,690
232. Houghton		2,895		4,496
233. Howard		1,500	2,881	14,730
234. Howe Island				674
235. Howick		2,130	5,706	24,611
236. Howland, Bidwell and Sheguindah	80	225		1,147
237. Hudson				977
238. Hullett	1,879			2,190
239. Humberstone		2,350	2,502	6,891
240. Humphrey		908		2,893
241. Hungerford		4,000	2,445	12,973
242. Huntingdon		650	1,220	7,500
243. Huntley		1,400	8,000	12,493
244. Huron	694	2,000	1,657	7,687
245. Innisfil	503		946	5,851
246. Jocelyn		1,240	124	2,964
247. Johnston, Tarbutt, etc.		185	2,650	5,626
248. Joly		47		844
249. Kaladar and Anglesea		350	7	2,648
250. Keewatin		9,476	4,283	14,732
251. Kennebec		600		4,202
252. Kenyon	121		337	8,740
253. Keppel		490	843	9,787
254. Kerns		200	750	2,900
255. Kincardine		750	7,825	10,304
256. King	39,017	1,975	359	46,036
257. Kingston	1,650	1,500	189	14,812
258. Kinloss			2,020	4,013
259. Kitley	383	2,000		2,408
260. Korah	150	300		9,761

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued*

Liabilities on December 31, 1905.

County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
.....	.....	2,000	.....	1,100	.....	.....	.....	.....	3,100	209
.....	545	.....	.....	.....	.....	.....	.....	.....	545	210
.....	.....	.....	.....	.....	.....	.....	.....	288	288	211
.....	1,000	.....	2,591	.....	.....	.....	.....	22	3,613	212
3,001	.....	.....	5,315	.....	.....	.....	.....	.....	8,316	213
.....	.....	.....	.....	.....	.....	.....	.....	100	100	214
.....	746	.....	.....	.....	.....	355	.....	.....	1,101	215
.....	178	.....	.....	.....	.....	283	.....	.....	461	216
563	783	2,710	196	.....	.....	.....	.....	230	4,482	217
.....	.....	.....	214	21,584	.....	.....	.....	4,929	26,727	218
.....	.....	.....	600	.....	.....	1,700	.....	600	2,900	219
.....	.....	5,552	1,720	507	.....	.....	.....	1,329	9,108	220
.....	.....	.....	.....	2,924	.....	.....	.....	427	3,351	221
115	341	.....	277	.....	.....	.....	.....	42	775	222
.....	.....	.....	.....	16,077	.....	.....	.....	.....	16,077	223
.....	.....	.....	.....	.....	.....	147	.....	.....	147	224
.....	664	.....	1,000	.....	.....	188	88	.....	1,940	225
.....	345	.....	667	.....	.....	.....	.....	45	1,057	226
.....	1,695	.....	2,105	.....	.....	.....	.....	744	4,544	227
494	.....	.....	.....	.....	.....	.....	.....	118	612	228
1,829	.....	.....	.....	.....	.....	.....	.....	110	1,939	229
.....	.....	.....	.....	.....	4,831	767	.....	.....	5,598	230
439	.....	.....	.....	.....	.....	.....	.....	.....	439	231
153	323	1,714	.....	.....	.....	317	.....	.....	2,507	232
.....	455	.....	1,379	14,586	.....	.....	.....	319	16,739	233
505	.....	.....	.....	.....	.....	.....	.....	160	665	234
4,400	.....	14,700	5,706	.....	400	.....	660	165	26,031	235
.....	230	.....	.....	.....	100	25	.....	2	357	236
.....	326	.....	.....	.....	.....	.....	.....	75	401	237
.....	.....	.....	.....	3,312	.....	.....	.....	56	3,368	238
.....	.....	.....	.....	1,654	.....	.....	.....	417	2,071	239
.....	720	.....	.....	.....	.....	300	.....	50	1,070	240
3,836	.....	.....	2,445	.....	.....	.....	.....	300	6,581	241
3,030	.....	.....	1,220	.....	.....	1,238	.....	.....	5,488	242
1,756	.....	.....	8,000	.....	1,079	.....	.....	1,471	12,306	243
.....	.....	.....	1,657	.....	.....	.....	.....	.....	1,657	244
.....	.....	.....	687	4,477	.....	.....	.....	.....	5,164	245
.....	.....	.....	600	.....	.....	100	.....	.....	700	246
.....	398	.....	2,650	.....	.....	520	.....	212	3,780	247
.....	260	.....	.....	.....	.....	41	.....	50	351	248
224	942	.....	.....	.....	.....	.....	.....	249	1,415	249
.....	.....	.....	4,283	4,100	7,054	58	.....	.....	15,495	250
882	1,833	.....	.....	.....	.....	.....	.....	142	2,857	251
.....	.....	.....	.....	3,301	.....	8,047	.....	.....	11,348	252
.....	757	3,000	788	4,977	575	.....	.....	127	10,224	253
.....	331	.....	750	.....	.....	.....	.....	312	1,393	254
.....	.....	.....	7,768	.....	.....	.....	.....	.....	7,768	255
.....	.....	.....	.....	.....	.....	.....	7,605	184	7,789	256
7,046	.....	.....	.....	.....	.....	.....	.....	1,143	8,189	257
.....	.....	.....	2,020	.....	.....	.....	.....	.....	2,020	258
.....	8	.....	.....	.....	.....	.....	.....	.....	8	259
.....	100	.....	.....	.....	.....	1,029	.....	174	1,303	260

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	License.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
261. Laird, Algoma	460	2,013	....	4	.....	.....	98
262. Lanark, Lanark	283	6,685	....	33	9	.....	250
263. Lancaster, Glengarry	203	14,327	103	2	22	.....	795
264. Lavallee, Rainy River	445	2,848	147	.....	.....	.....	.....
265. Lavant, Lanark	81	1,841	67	.....	.....	.....	.....
266. Laxton, Digby and Long, Victoria	29	2,860	....	.....	.....	35	.....
267. Leeds and Lansdowne Front, Leeds	2,101	15,864	15	116	.....	.....	5,300
268. Leeds and Lansdowne Rear, Leeds	1,442	10,566	82	1	74	5,000	1,626
269. Limerick, Hastings	196	1,863	20	.....	.....	.....	.....
270. Lindsay, Bruce	726	2,949	....	.....	.....	.....	1,300
271. Lobo, Middlesex	13,141	18,314	100	1	89	.....	.....
272. Lochiel, Glengarry	26	15,179	294	.....	13	.....	.....
273. Logan, Perth	4,297	21,490	20	.....	256	.....	.....
274. London, Middlesex	11,922	42,430	243	.....	145	.....	3,000
275. Longueuil, Prescott	.....	3,044	32	.....	.....	.....	.....
276. Loughborough, Frontenac	513	8,639	59	26	.....	.....	300
277. Louth, Lincoln	49	12,718	38	.....	8	.....	2,936
278. Luther E., Dufferin	1,027	11,712	....	.....	17	.....	1,500
279. Luther, W., Wellington	1,250	12,834	36	8	26	.....	2,900
280. Lutterworth, Haliburton	92	1,662	....	.....	.....	.....	.....
281. McDougall, Parry Sound	254	1,852	....	.....	.....	.....	.....
282. McGillivray, Middlesex	1,394	19,033	....	35	19	.....	2,800
283. McIrvine, Rainy River	137	455	....	.....	.....	.....	300
284. McKellar, Parry Sound	320	2,429	36	.....	.....	.....	200
285. McKillop, Huron	3,819	19,664	16	.....	1,018	2,335	3,430
286. McKim, Nipissing	.....	3,251	....	6	.....	.....	2,100
287. McLean and Ridout, Muskoka	77	2,255	3	42	.....	722	.....
288. McMurrich, Parry Sound	832	2,260	25	.....	.....	.....	.....
289. McNabb, Renfrew	7,316	12,701	110	23	115	.....	.....
290. Macaulay, Muskoka	641	2,614	5	4	.....	.....	900
291. Macdonald and Meredith, Algoma	662	2,594	....	.....	13	.....	200
292. Machar, Parry Sound	1,334	3,881	184	5	.....	.....	400
293. Madoc, Hastings	1,319	14,837	....	.....	.....	.....	.....
294. Maidstone, Essex	1,170	20,518	198	.....	75	.....	3,000
295. Maladide, Elgin	423	25,710	38	.....	.....	.....	6,600
296. Malden, Essex	1,258	9,470	43	.....	8	.....	3,500
297. Manvers, Durham	1,482	14,441	210	8	.....	.....	1,957
298. Mara, Ontario	1,301	11,541	165	.....	.....	.....	4,002
299. March, Carleton	708	4,783	48	28	44	.....	.....
300. Mariposa, Victoria	10,757	25,030	....	29	115	.....	2,000
301. Markham, York	.....	31,211	210	.....	.....	.....	.....
302. Marlborough, Carleton	1,803	7,985	24	.....	.....	.....	.....
303. Marmora and Lake, Hastings	439	8,676	20	35	.....	.....	298
304. Maryborough, Wellington	4,600	19,070	10	.....	.....	.....	2,500
305. Marysburgh N., Prince Edward	484	4,333	....	.....	315	24	.....
306. Marysburgh S., Prince Edward	216	5,197	....	.....	437	294	400
307. Matchedash, Simcoe	455	861	....	.....	.....	.....	.....
308. Matilda, Dundas	.....	26,160	....	.....	25	.....	18,185
309. Mattawan, Nipissing	109	308	....	.....	.....	.....	.....
310. Mayo, Hastings	.....	1,655	....	.....	.....	.....	.....
311. Medonte, Simcoe	457	16,558	258	64	12	.....	.....
312. Medora and Wood, Muskoka	651	8,129	68	.....	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premium on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	.....	2,575	211	.....	55	310	....	261
.....	.....	.....	.....	.....	60	7,320	460	.....	143	640	250	262
500	.....	.....	.....	.....	167	16,119	991	653	342	1,484	....	263
.....	.....	.....	.....	.....	49	3,489	404	11	56	457	....	264
.....	.....	.....	.....	.....	78	2,067	170	.....	114	69	....	265
.....	.....	.....	.....	.....	92	3,016	427	106	139	265	....	266
.....	.....	.....	.....	.....	73	23,469	984	.....	336	6,153	....	267
.....	.....	.....	.....	.....	2	18,793	647	1	125	3,821	....	268
.....	.....	.....	.....	210	1	2,290	322	.....	60	385	....	269
.....	.....	.....	.....	.....	104	5,079	498	.....	130	1,180	....	270
.....	.....	.....	.....	.....	232	31,877	898	37	209	5,356	200	271
1,800	.....	.....	.....	.....	449	17,761	823	1,553	230	1,390	....	272
.....	42	6,500	.....	379	1,513	34,497	1,001	5	337	5,449	....	273
.....	.....	.....	.....	.....	1,245	58,985	2,124	376	674	12,105	....	274
.....	.....	.....	.....	.....	.....	3,076	193	.....	27	215	....	275
.....	.....	.....	.....	.....	1	9,538	637	71	120	1,250	....	276
.....	.....	.....	.....	.....	73	15,822	567	.....	183	4,949	182	277
2,000	1,113	.....	103	.....	734	18,206	467	369	185	2,453	....	278
4,000	572	.....	.....	.....	606	22,232	654	83	162	2,087	....	279
.....	.....	.....	.....	.....	.....	1,754	215	.....	60	116	....	280
.....	.....	.....	.....	.....	17	2,123	245	.....	57	477	..	281
500	.....	.....	.....	.....	56	23,837	795	59	198	5,619	....	282
.....	.....	.....	.....	.....	475	1,367	50	.....	14	384	....	283
.....	.....	.....	.....	.....	139	3,124	271	.....	99	1,119	....	284
.....	3,968	6,000	94	.....	118	40,462	779	20	212	4,351	....	285
.....	.....	.....	.....	.....	312	5,669	553	5	94	666	403	286
.....	.....	2,500	.....	.....	1,024	6,623	419	12	89	4,675	....	287
.....	.....	.....	.....	.....	585	3,702	289	9	142	302	....	288
4,950	.....	.....	.....	.....	59	25,274	718	.....	258	1,421	....	289
.....	.....	.....	.....	.....	138	4,302	308	22	78	1,074	....	290
.....	.....	.....	.....	.....	6	3,475	270	31	98	713	33	291
.....	.....	.....	.....	.....	35	5,839	380	26	87	267	786	392
.....	.....	.....	.....	.....	2	16,158	563	25	147	432	....	293
.....	4,733	.....	93	.....	145	29,932	1,145	162	426	3,309	....	294
.....	1,406	.....	4	.....	783	34,964	1,141	434	413	5,531	....	295
....	8,177	.....	.....	.....	*3,000	25,456	602	675	241	2,975	....	296
.....	.....	.....	.....	.....	193	18,291	918	7	240	2,581	279	297
.....	.....	.....	.....	.....	.....	17,009	982	.....	202	3,822	....	298
.....	.....	.....	.....	.....	35	5,646	413	.....	87	1,075	40	299
.....	.....	.....	.....	.....	17	37,948	1,202	170	355	5,311	....	300
.....	.....	.....	.....	.....	402	31,823	1,214	19	427	8,960	....	301
.....	4,507	.....	401	.....	2	14,722	651	.....	158	567	....	302
.....	.....	.....	.....	.....	387	9,855	241	.....	269	619	....	303
.....	.....	1,500	.....	50	34	27,764	952	126	326	2,703	15	304
.....	.....	.....	.....	.....	108	5,264	332	.....	137	260	....	305
.....	.....	.....	.....	.....	.....	6,544	281	.....	142	310	....	306
.....	.....	.....	.....	.....	48	1,364	109	.....	49	158	....	307
.....	12,631	.....	.....	.....	†7,955	64,956	511	35	349	3,203	....	308
.....	.....	.....	.....	.....	.....	417	80	.....	7	6	....	309
.....	.....	.....	.....	235	.....	1,890	258	.....	50	265	....	310
500	1,847	.....	.....	.....	128	19,824	1,057	72	429	4,339	..	311
300	.....	.....	.....	.....	395	9,543	682	61	305	2,676	119	312

* Received from other municipalities as share of drainage debt.
† Including $7,067 from other municipalities as share of drainage debt.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1905.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund, investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
261. Laird	.....	5	.....	1,034	.....	.....	.....
262. Lanark	.....	10	1,645	3,769	.....	.....	.....
263. Lancaster	77	97	2,443	8,539	.....	.....	.....
264. Lavalee	12	17	.....	1,750	.....	.....	.....
265. Lavant	20	.....	221	941	.....	.....	.....
266. Laxton, Digby and Longford	118	94	233	998	.....	.....	.....
267. Leeds and Lansdowne, Front	10	34	4,700	6,568	.....	.....	.....
268. Leeds and Lansdowne, Rear	.....	17	1,511	5,016	.....	573	.....
269. Limerick	4	94	111	1,123	.....	.....	.....
270. Lindsay	20	5	117	1,859	.....	.....	.....
271. Lobo	13	195	6,003	5,785	.....	.....	.....
272. Lochiel	114	22	2,215	8,984	.....	.....	.....
273. Logan	27	124	4,736	5,828	1,844	441	.....
274. London	137	396	12,940	13,623	1,162	.....	.....
275. Longueuil	.....	.....	475	1,950	104	.....	.....
276. Loughborough	.....	38	2,688	4,284	.....	.....	.....
277. Louth	11	10	2,381	3,966	.....	.....	.....
278. Luther, E.	37	10	1,399	7,140	1,562	.....	.....
279. Luther, W.	70	12	2,589	9,143	1,568	50	.....
280. Lutterworth	91	5	129	918	.....	.....	.....
281. McDougall	2	5	.....	1,035	.....	.....	.....
282. McGillivray	14	8	4,592	7,489	.....	.....	.....
283. McIrvine	.....	5	.....	283	.....	.....	.....
284. McKellar	.....	8	.....	1,114	.....	.....	.....
285. McKillop	21	78	3,968	5,177	1,882	2,335	12,446
286. McKim	.....	5	.....	150	.....	.....	.....
287. McLean and Ridout	15	13	.....	822	.....	.....	105
288. McMurrich	62	15	.....	1,163	.....	.....	.....
289. McNab	54	4	1,863	12,368	.....	.....	.....
290. Macaulay	69	70	.....	1,547	.....	.....	.....
291. Macdonald and Meredith	6	5	.....	1,075	.....	.....	.....
292. Machar	12	35	.....	2,579	.....	.....	.....
293. Madoc	12	137	3,238	6,455	.....	.....	.....
294. Maidstone	39	648	2,560	5,305	6,237	.....	.....
295. Malahide	25	29	5,067	8,016	2,651	.....	.....
296. Malden	109	100	1,483	2,923	10,736	.....	.....
297. Manvers	41	200	2,633	7,025	.....	.....	.....
298. Mara	41	32	2,202	4,618	502	.....	.....
299. March	36	.....	760	1,533	.....	.....	.....
300. Mariposa	404	857	11,915	10,304	3,107	.....	.....
301. Markham	76	327	4,904	12,167	.....	.....	.....
302. Marlborough	3	54	1,138	3,136	5,864	.....	.....
303. Marmora and Lake	41	232	605	3,576	.....	.....	.....
304. Maryborough	39	51	4,433	8,315	237	.....	.....
305. Marysburgh, N.	16	178	1,088	3,075	.....	.....	51
306. Marysburgh, S.	293	100	1,036	2,884	.....	.....	30
307. Matchedash	.....	3	270	483	.....	.....	.....
308. Matilda	.....	536	3,843	7,873	15,556	.....	707
309. Mattawan	.....	.....	.....	98	.....	.....	.....
310. Mayo	.....	5	114	1,072	.....	.....	.....
311. Medonte	69	175	3,510	8,016	548	.....	.....
312. Medora and Wood	43	265	.....	3,466	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued*								Assets on December 31, 1905.			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
140	.....	.....	98	49	.....	1	1,903	672	443	.....	261
.....	.....	.....	125	1	.....	33	7,076	244	504	.....	262
100	.....	.....	795	118	.....	242	15,881	238	3,388	.....	263
.....	.....	.....	.....	2	.....	76	2,785	704	1,767	.....	264
100	.....	.....	50	29	.....	76	1,790	277	24	.....	265
.....	.....	.....	.....	1	.....	90	2,471	545	.....	.....	266
.....	.....	.....	4,300	94	.....	83	23,262	207	315	.....	267
.....	.....	5,000	1,626	287	.....	40	18,664	129	487	.....	268
.....	.....	.....	.....	3	.....	124	2,226	64	1,413	.....	269
.....	.....	.....	833	.....	.....	98	4,740	339	3,172	.....	270
152	.....	.....	.....	88	.....	75	19,011	12,866	251	.....	271
600	.....	.....	1,500	85	.....	94	17,610	151	16,049	.....	272
249	2,473	.....	.....	815	.....	170	23,499	10,998	389	441	273
260	.....	.....	3,000	41	.....	560	47,398	11,587	14,422	.....	274
.....	.....	.....	5	13	.....	11	2,996	80	1,495	.....	275
.....	.....	.....	300	17	.....	32	9,437	101	3,890	.....	276
.....	.....	87	2,936	112	.....	176	15,560	262	688	.....	277
655	652	219	1,500	473	.....	20	17,141	1,065	363	.....	278
470	919	.....	2,000	428	58	355	20,648	1,584	451	362	279
.....	.....	.....	.....	.....	.....	126	1,660	94	629	.....	280
.....	.....	.....	.....	.....	.....	.....	1,821	302	1,280	.....	281
638	.....	.....	2,800	203	.....	211	22,626	1,211	80	.....	282
109	.....	.....	250	162	.....	6	1,263	104	1,082	.....	283
100	.....	.....	200	24	.....	36	2,971	153	1,679	.....	284
315	982	411	3,430	1,282	.....	399	38,088	2,374	108	.....	285
224	.....	.....	2,771	291	.....	4	5,166	503	594	.....	286
118	.....	.....	.....	15	98	127	6,508	115	2,114	.....	287
91	.....	.....	.....	17	.....	52	2,142	1,560	1,006	.....	288
300	.....	.....	.....	75	.....	10	17,071	8,203	1,087	.....	289
68	.....	.....	850	58	.....	10	4,154	148	991	.....	290
271	.....	.....	300	237	.....	21	3,060	415	2,061	.....	291
246	.....	.....	400	148	.....	235	5,201	638	1,649	.....	292
191	.....	1,345	.....	963	.....	323	13,831	2,327	5,084	.....	293
83	3,345	.....	2,000	1,116	.....	86	26,461	3,471	20,151	.....	294
.....	820	187	6,600	372	.....	335	31,621	3,343	1,245	.....	295
.....	371	.....	4,306	394	.....	86	25,001	455	5,064	.....	296
535	.....	.....	1,957	287	.....	139	16,842	1,449	308	.....	297
130	.....	.....	3,775	131	.....	231	16,668	341	447	.....	298
.....	.....	473	.....	47	.....	13	4,477	1,169	2,640	.....	299
194	395	.....	2,000	415	.....	147	36,776	1,172	632	.....	300
280	.....	.....	241	310	.....	254	29,179	2,644	3,608	.....	301
.....	183	.....	500	370	.....	31	12,655	2,067	4,167	.....	302
262	.....	.....	3,826	133	.....	2	9,806	49	5,096	.....	303
525	.....	125	4,000	209	35	105	22,196	5,568	768	.....	304
.....	.....	.....	.....	.....	.....	2	5,139	125	.....	.....	305
.....	.....	.....	694	60	.....	31	5,861	683	.....	.....	306
.....	.....	.....	.....	20	.....	.....	1,092	272	1,250	50	307
.....	3,283	.....	27,270	1,715	.....	75	64,956	.....	1,401	.....	308
.....	.....	.....	.....	.....	.....	6	197	220	396	.....	309
.....	.....	.....	27	.....	.....	.....	1,791	99	1,715	.....	310
324	167	108	.....	361	.....	104	19,279	545	4,056	.....	311
100	.....	.....	.....	6	.....	83	7,806	1,737	4,376	.....	312

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
261. Laird		100	685	1,900
262. Lanark		2,200		2,948
263. Lancaster			819	4,445
264. Lavallee				2,471
265. Lavant			300	601
266. Laxton, Digby and Longford	102	500		1,147
267. Leeds and Lansdowne, Front		5,000	600	6,122
268. Leeds and Lansdowne, Rear				616
269. Limerick		250		1,727
270. Lindsay			353	3,864
271. Lobo		1,660	2,664	17,441
272. Lochiel		70	2,300	18,570
273. Logan			2,806	14,634
274. London		2,000		28,009
275. Longueuil				1,575
276. Loughborough			80	4,071
277. Louth		230		1,180
278. Luther		416	4,779	6,623
279. Luther, W		600	6,892	9,889
280. Lutterworth				723
281. McDougall		37		1,619
282. McGillivray		1,250	2,315	4,856
283. McIrvine			2,977	4,163
284. McKellar		480	223	2,535
285. McKillop	27,028		12,216	41,726
286. McKim		661	4,020	5,778
287. McLean and Ridout	105	1,000	124	3,458
288. McMurrich		460	199	3,225
289. McNab		750		10,040
290. Macaulay		900	642	2,681
291. Macdonald and Meredith		125	3,408	6,009
292. Machar		1,090	2,654	6,031
293. Madoc		675	1,204	9,290
294. Maidstone		600	2,843	27,065
295. Malahide		250		4,838
296. Malden		800	641	6,960
297. Manvers			3,312	5,069
298. Mara		2,520	3,155	6,463
299. March	400	2,600		6,809
300. Mariposa		4,795	2,774	9,373
301. Markham		1,100	493	7,845
302. Marlborough		260		6,794
303. Marmora and Lake		1,200	1,054	7,399
304. Maryborough		530	1,003	7,869
305. Marysburgh, N	6,950	1,000	115	8,190
306. Marysburgh, S	10,097	850		11,630
307. Matchedash			400	1,972
308. Matilda	707	200	6,317	8,625
309. Mattawan				616
310. Mayo				1,814
311. Medonte		2,050	6,321	12,972
312. Medora and Wood		1,000	335	7,448

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	650	.....	.....	.....	.....	.....	650	261
.....	.....	.....	.....	.....	.....	125	.....	292	417	262
2,225	.....	.....	800	.....	.....	.....	.....	1,322	4,347	263
.....	859	.....	.....	.....	.....	.....	.....	.....	859	264
.....	140	.....	300	.....	.....	125	.....	.....	565	265
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	266
.....	.....	.....	.....	.....	.....	1,000	.....	80	1,080	267
.....	.....	.....	.....	.....	.....	.....	.....	60	60	268
115	419	.....	.....	.....	.....	.....	.....	81	615	269
.....	1,450	.....	.....	.....	.....	1,371	.....	6	2,827	270
6,442	.....	.....	1,928	.....	.....	.....	.....	.....	8,370	271
1,978	7,848	.....	2,300	.....	.....	.....	.....	220	12,346	272
.....	.....	6,500	1,544	8,836	.....	.....	.....	240	17,120	273
13,883	295	.....	.....	.....	.....	.....	.....	.....	14,178	274
522	738	.....	.....	.....	.....	.....	.....	.....	1,260	275
2,495	319	.....	.....	.....	.....	.....	.....	75	2,889	276
.....	.....	.....	.....	.....	976	.....	.....	75	1,051	277
.....	.....	.....	4,082	5,176	229	.....	.....	1,098	10,585	278
.....	.....	.....	6,840	3,338	.....	914	.....	59	11,151	279
.....	487	.....	.....	.....	.....	.....	.....	30	517	280
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	281
.....	.....	.....	2,315	.....	.....	.....	.....	.....	2,315	282
.....	240	.....	2,977	.....	.....	50	.....	62	3,329	283
.....	415	.....	200	.....	.....	.....	.....	12	627	284
.....	.....	5,589	.....	11,984	.....	.....	.....	160	17,733	285
.....	832	.....	4,020	.....	.....	.....	.....	611	5,463	286
.....	882	.....	124	.....	2,500	.....	.....	85	3,591	287
.....	1,252	.....	199	.....	.....	.....	.....	14	1,465	288
1,167	.....	.....	4,650	.....	.....	.....	.....	600	6,417	289
.....	804	.....	607	.....	.....	300	.....	163	1,874	290
.....	610	.....	3,408	.....	.....	.....	.....	.....	4,018	291
.....	1,453	.....	2,269	.....	.....	.....	.....	93	3,815	292
.....	.....	24,588	1,204	.....	.....	.....	.....	.....	25,792	293
2,560	7,100	.....	837	22,277	.....	3,049	.....	2,699	38,522	294
.....	272	2,479	.....	4,535	.....	.....	.....	1,567	8,853	295
1,483	1,637	.....	.....	8,439	.....	2,570	.....	112	14,241	296
.....	.....	.....	3,218	.....	.....	.....	.....	90	3,308	297
.....	.....	.....	3,155	.....	.....	502	.....	.....	3,657	298
760	519	.....	.....	.....	469	.....	.....	.....	1,748	299
131	.....	.....	1,762	8,591	.....	.....	.....	.....	10,484	300
6,948	.....	.....	293	.....	.....	.....	.....	1,718	8,959	301
1,138	.....	.....	.....	5,451	.....	1,971	.....	949	9,509	302
3,155	428	.....	988	.....	.....	298	.....	607	5,476	303
4,408	.....	.....	986	.....	1,375	.....	.....	373	7,142	304
.....	.....	.....	.....	.....	.....	.....	.....	7	7	305
.....	.....	.....	.....	.....	.....	.....	1,455	.....	1,455	306
304	755	.....	400	.....	.....	.....	.....	.....	1,459	307
.....	.....	.....	.....	18,655	.....	6,300	.....	5,947	30,902	308
.....	244	.....	.....	.....	.....	.....	.....	107	351	309
116	1,129	.....	.....	.....	.....	.....	248	.....	1,493	310
.....	.....	.....	6,321	2,864	807	.....	.....	150	10,142	311
.....	1,290	.....	300	.....	.....	.....	.....	1,637	3,227	312

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
313. Melancthon, Dufferin	397	14,367	....	5	.....	.....	2,700
314. Mersea, Essex	3,047	35,001	148	8	1,007	.....	3,500
315. Metcalfe, Middlesex	6,085	14,146	16	5	21	.....	2,500
316. Middleton, Norfolk	280	12,965	24	1	104	.....	.....
317. Minden, Haliburton	25	3,537	26	.....	.....	.....	.....
318. Minto, Wellington	3,439	16,879	6	8	45	650	2,500
319. Monaghan N., Peterborough	1,463	4,871	80	35	9	.....	1,500
320. Monaghan S., Northumberland	372	3,825	37	.....	.....	.....	95
321. Monck, Muskoka	1,325	4,401	4	.....	.....	.....	200
322. Monmouth, Haliburton	405	1,722	....	.....	8	85	.....
323. Mono, Dufferin	1,398	14,392	40	.....	42	.....	1,000
324. Montague, Lanark	.....	8,750	....	.....	32	.....	1,712
325. Monteagle and Herschel, Hastings	165	3,203	63	9	.....	.....	.....
326. Moore, Lambton	239	30,193	431	.....	10	.....	.....
327. Morley, Rainy River	218	1,683	190	11	.....	.....	800
328. Mornington, Perth	8,108	23,432	285	.....	45	.....	.....
329. Morris, Huron	4,126	13,975	32	.....	33	.....	1,800
330. Morrison, Muskoka	524	2,166	16	.....	9	.....	.....
331. Mosa, Middlesex	417	15,541	....	3	.....	.....	4,400
332. Moulton, Haldimond	.....	6,319	....	.....	116	67	1,353
333. Mountain, Dundas	.....	16,128	300	68	.....	.....	15,353
334. Mulmur, Dufferin	928	14,884	43	1	.....	.....	2,500
335. Murray, Northumberland	1,843	13,616	40	53	.....	.....	2,920
336. Muskoka, Muskoka	924	2,834	....	.....	.....	.....	.....
337. Nairn and Lorne, Muskoka	59	1,067	73	60	.....	.....	.....
338. Nassagaweya, Halton	1,655	7,570	32	8	482	72	.....
339. Neebing, Thunder Bay	100	3,741	25	140	134	184	3,227
340. Neelon, Nipissing	.....	396	....	.....	.....	.....	100
341. Nelson, Halton	474	14,920	65	.....	1,126	4,601	3,512
342. Nepean, Carleton	804	25,401	180	29	823	.....	.....
343. Niagara, Lincoln	753	11,561	....	70	41	.....	1,200
344. Nichol, Wellington	962	8,384	116	.....	26	.....	.....
345. Nipissing, Parry Sound	306	1,940	45	20	.....	.....	.....
346. Nissouri E., Oxford	1,921	17,899	35	131	35	.....	.....
347. Nissouri W., Middlesex	8,824	20,679	67	12	.....	.....	4,000
348. Normanby, Grey	162	18,066	224	39	.....	.....	5,335
349. Norwich N., Oxford	2,265	16,128	....	.....	91	.....	5,000
350. Norwich S., Oxford	731	12,999	50	9	70	.....	5,300
351. Nottawasaga, Simcoe	8,553	25,869	70	.....	.....	.....	3,250
352. Oakland, Brant	361	3,947	....	83	.....	.....	300
353. Oakley, Muskoka	86	1,251	12	.....	.....	.....	.....
354. Olden, Frontenac	40	5,262	3	22	.....	.....	.....
355. Oliver, Thunder Bay	52	3,892	....	57	26	.....	900
356. Oneida, Haldimand	855	7,917	....	.....	9	.....	400
357. Onondago, Brant	781	6,931	32	5	.....	.....	.....
358. Opo, Victoria	7,093	16,758	....	4	319	.....	3,500
359. Orford, Kent	4,652	19,928	32	41	.....	.....	5,000
360. Orillia, Simcoe	1,374	12,606	129	.....	.....	587	6,000
361. Oro, Simcoe	5,024	14,958	41	60	66	.....	.....
362. Osgoode, Carleton	.....	24,944	288	414	.....	104	3,520
363. Osnabruck, Stormont	5,799	19,696	271	21	12	.....	19,235
364. Oso, Frontenac	855	3,266	120	.....	.....	.....	.....
365. Osprey, Grey	563	13,484	64	14	15	.....	1,600

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	34	17,503	798	36	194	2,432	.....	313
.....	21,533	1,773	1,894	.....	3,301	71,212	1,597	109	604	6,415	138	314
.....	.....	.....	.....	33	80	22,886	596	47	169	3,511	.....	315
.....	6,192	.....	153	.....	450	20,169	696	3	176	1,998	.....	316
1,000	.....	.....	.....	.....	71	4,659	359	.....	86	529	.....	317
.....	.....	.....	.....	.....	153	23,680	1,086	1,321	198	3,448	.....	318
.....	.....	.....	.....	.....	47	8,005	368	16	172	1,256	.....	319
.....	.....	.....	.....	.....	212	4,541	255	.....	116	813	.....	320
.....	.....	.....	.....	.....	28	5,958	460	30	140	1,652	.....	321
500	.....	.....	.....	.....	64	2,784	239	18	79	58	.....	322
.....	.....	.....	.....	57	1,595	18,524	714	24	307	3,821	5	323
.....	.....	.....	.....	5,410	15	15,919	505	57	235	870	152	324
.....	.....	.....	.....	360	6	3,806	277	.....	95	409	.....	325
.....	12,759	.....	46	22	*3,796	47,496	1,424	300	284	7,577	3,150	326
.....	.....	.....	.....	.....	1	2,903	292	65	94	662	.....	327
.....	513	5,000	.....	405	501	38,289	1,055	597	198	5,857	.....	328
.....	.....	3,500	.....	.....	461	23,927	764	.....	162	5,268	.....	329
.....	.....	.....	.....	.....	12	2,727	222	.....	100	344	.....	330
.....	1,167	.....	.....	8	355	21,891	767	26	275	2,515	.....	331
.....	.....	.....	.....	.....	104	7,959	490	9	299	473	.....	332
1,100	9,018	.....	.....	.....	.....	41,967	602	.....	176	7,732	.....	333
.....	.....	.....	.....	.....	139	18,495	961	10	272	3,988	.....	334
.....	.....	.....	.....	.....	231	18,703	623	.....	148	4,467	.....	335
450	.....	.....	8	.....	.....	4,216	252	17	39	404	.....	336
.....	.....	.....	.....	.....	300	1,559	350	7	107	72	453	337
.....	.....	.....	.....	.....	100	9,919	662	.....	208	2,104	.....	338
.....	.....	.....	.....	.....	1,747	9,298	755	27	303	1,788	243	339
.....	.....	.....	.....	.....	.....	496	195	.....	45	66	.....	340
.....	.....	.....	.....	.....	339	25,037	1,062	239	450	4,052	47	341
.....	.....	5,000	300	.....	435	32,972	1,604	30	430	10,264	.....	342
.....	.....	.....	.....	.....	36	13,661	581	41	226	2,934	.....	343
.....	.....	.....	.....	100	128	9,716	702	60	186	1,248	.....	344
.....	.....	.....	.....	.....	.....	2,311	226	10	203	151	.....	345
.....	.....	.....	.....	776	248	21,045	566	88	224	7,266	.....	346
.....	.....	.....	.....	.....	38	33,620	1,021	139	154	6,121	.....	347
.....	.....	.....	.....	.....	135	23,961	913	1,391	495	2,753	610	348
.....	1,218	.....	...	565	409	25,676	834	404	220	6,658	.....	349
.....	.....	.....	.....	424	16	19,599	465	14	257	6,417	.....	350
2,400	.....	.....	.....	.....	173	40,315	1,556	6	425	6,921	.....	351
.....	.....	.....	.....	.....	21	4,712	327	.....	56	208	.....	352
.....	.....	.....	.....	.....	87	1,436	284	4	55	249	.....	353
.....	.....	.....	.....	.....	10	5,337	425	12	68	545	.....	354
.....	.....	.....	.....	.....	.....	4,927	382	.....	67	1,131	565	355
.....	.....	.....	.....	.....	79	9,260	398	15	141	489	400	356
.....	.....	.....	.....	.....	.....	7,749	501	.....	91	952	9	357
.....	.....	.....	.....	.....	529	28,203	752	987	262	4,852	.....	358
.....	.....	.....	.....	.....	93	29,746	1,229	11	362	3,290	.....	359
2,500	.....	.....	79	....	171	23,446	996	102	651	3,751	.....	360
.....	.....	.....	.....	.....	70	20,219	917	.....	237	2,281	20	361
.....	.....	.....	.....	.....	1,587	30,857	1,774	124	602	4,421	.....	362
.....	.....	.....	.....	.....	151	45,185	572	533	445	2,617	175	363
.....	.....	.....	.....	.....	134	4,375	298	3	111	236	.....	364
1,800	.....	.....	26	.....	60	17,626	938	110	213	2,476	.....	365

* Including $3,150 for gravel pit, payment deferred.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Township.	Disbursements, 1905.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
313. Melancthon	10	46	2,425	8,048			
314. Mersea	6	542	3,352	8,050	14,429		
315. Metcalfe	64		3,375	3,596	448		
316. Middleton	40	28	2,775	4,236	6,085		
317. Minden	1	5	298	2,794			
318. Minto	71	17	3,996	6,954	227		624
319. Monaghan, N	44	18	1,616	1,624			
320. Monaghan, S	6	24	1,400	1,925			
321. Monck		11		1,631			
322. Monmouth		40	200	1,557		40	8
323. Mono	412		2,313	7,391			
324. Montague	133		2,222	4,263	81		
325. Monteagle and Herschel	44	12	265	1,964			
326. Moore		307	5,713	8,285	12,501		
327. Morley		5		1,281			
328. Mornington	28	43	4,510	6,165	4,934		
329. Morris	18		2,361	4,514	77		
330. Morrison	23	10		1,316			
331. Mosa	20	6	4,275	4,676	3,344		
332. Moulton	19	68	1,219	2,637	591		
333. Mountain		216	2,647	9,757	9,578		
334. Mulmur	42	30	3,149	7,218			
335. Murray	21	100	2,115	5,884			
336. Muskoka	6	39		1,788			
337. Nairn and Lorne		5		446			
338. Nassagaweya	12	205	1,283	4,049			45
339. Neebing		23		588		686	23
340. Neelon							
341. Nelson	530	346	2,104	6,812			4,072
342. Nepean	135	167	3,734	10,638			
343. Niagara	24	10	3,674	4,440			
344. Nichol	63		2,349	3,285			
345. Nipissing	25			1,113			
346. Nissouri, E	113	25	3,661	6,175	206		
347. Nissouri, W	84		6,155	6,306			
348. Normanby	38	13	3,313	8,324			
349. Norwich, N	50	44	2,651	4,608	1,731		
350. Norwich, S		50	1,984	4,760	251		
351. Nottawasaga	43	145	6,237	12,659			
352. Oakland	151	103	599	1,838			
353. Oakley				325			
354. Olden	27	38	899	2,527			
355. Oliver	3	106		1,355		118	
356. Oneida	25	276	2,408	3,678			
357. Onondaga	15	119	1,189	2,377			
358. Ops	79	359	7,592	5,393			
359. Orford	23	172	2,290	5,601	2,357		
360. Orillia	64	161	2,495	8,401			
361. Oro	14	10	4,044	8,113	118		
362. Osgoode		21	3,424	10,821	2,760		
363. Osnabrack	51	301	2,902	10,361	8,805		
364. Oso		39	1,000	2,179			
365. Osprey	51	147	2,029	8,338			

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets on December 31, 1905.			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
257	.....	.....	2,700	147	.....	40	17,133	370	519	.....	313
489	8,816	1,250	13,500	3,323	.....	640	63,260	7,952	21,434	.....	314
.....	253	1,811	2,500	560	.....	95	17,025	5,861	2,919	.....	315
175	577	.....	.....	162	.....	93	17,044	3,125	2,408	.....	316
112	.....	.....	300	83	.....	14	4,581	78	2,496	.....	317
.....	333	.....	2,500	343	.....	69	21,187	2,493	241	.....	318
.....	.....	.....	1,500	48	.....	71	6,733	1,272	89	.....	319
.....	.....	.....	.....	2	.....	.....	4,541	.....	599	.....	320
200	.....	.....	200	46	.....	14	4,384	1,574	799	.....	321
100	.....	.....	.....	36	.....	49	2,424	360	2,441	298	322
96	.....	.....	1,000	31	.....	45	16,159	2,365	.....	.....	323
.....	.....	.....	7,018	254	.....	18	15,808	111	2,022	.....	324
163	.....	.....	.....	50	.....	.....	3,279	527	4,592	.....	325
190	4,170	.....	.....	1,819	171	320	46,211	1,285	16,828	.....	326
31	.....	.....	100	66	.....	111	2,707	196	2,136	.....	327
1,077	1,358	2,394	.....	1,629	212	*5,270	35,327	2,962	.....	.....	328
200	384	118	1,800	385	42	48	16,141	7,786	780	.....	329
.....	.....	.....	.....	.....	.....	.....	2,015	712	699	.....	330
.....	1,268	.....	3,350	263	.....	589	21,374	517	10,188	.....	331
.....	.....	.....	2,025	67	.....	62	7,959	.....	.....	.....	332
215	2,917	.....	4,593	3,091	.....	443	41,967	.....	9,778	.....	333
.....	.....	.....	2,500	50	.....	3	18,213	282	733	.....	334
.....	.....	.....	2,920	79	.....	169	16,526	2,177	1,971	.....	335
.....	.....	.....	.....	.....	.....	132	2,677	1,539	675	.....	336
.....	.....	.....	50	.....	.....	.....	1,490	69	3,249	.....	337
.....	.....	.....	.....	.....	.....	53	8,621	1,298	2,611	.....	338
.....	.....	.....	3,168	365	.....	422	8,391	907	6,085	4,238	339
.....	.....	.....	100	2	.....	.....	408	88	69	.....	340
.....	.....	.....	3,512	99	.....	432	23,757	1,280	899	10,833	341
492	437	511	.....	809	.....	373	29,624	3,348	25,224	.....	342
.....	.....	.....	1,200	17	.....	182	13,329	332	82	.....	343
567	.....	.....	.....	104	.....	98	8,662	1,054	3,066	.....	344
195	.....	.....	.....	60	.....	75	2,058	253	2,201	.....	345
202	122	.....	.....	302	.....	80	19,030	2,015	9	.....	346
.....	.....	.....	3,562	1	.....	168	23,711	9,909	3,813	.....	347
.....	.....	.....	5,335	114	.....	405	23,734	227	89	.....	348
.....	294	.....	4,000	100	.....	225	21,819	3,857	118	.....	349
.....	92	.....	4,800	77	.....	174	19,341	258	24	.....	350
127	.....	.....	3,250	201	.....	239	31,809	8,506	185	.....	351
.....	.....	600	300	90	.....	60	4,332	380	60	.....	352
51	.....	.....	.....	26	.....	44	1,038	398	975	.....	353
.....	.....	.....	.....	.....	.....	120	4,661	676	956	.....	354
49	.....	.....	900	186	.....	.....	4,862	65	1,000	945	355
.....	.....	.....	200	2	.....	143	8,175	1,085	.....	.....	356
340	.....	511	.....	66	.....	111	6,281	1,468	94	.....	357
.....	557	1,693	3,500	938	.....	339	27,303	900	111	.....	358
314	724	180	5,000	377	.....	262	22,192	7,554	2,849	.....	359
466	.....	.....	4,500	274	.....	660	22,521	925	5,963	.....	360
.....	.....	.....	.....	.....	.....	23	15,777	4,442	3,075	.....	361
516	2,180	318	911	2,539	.....	446	30,857	.....	12,620	.....	362
411	1,807	650	13,116	1,538	.....	265	14,549	636	6,289	.....	363
.....	.....	.....	.....	.....	.....	22	3,888	487	1,126	.....	364
342	.....	.....	1,600	206	.....	116	16,596	1,030	877	.....	365

* Including $5,000 bonus to Guelph Junction Ry.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS.

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
313. Melancthon		1,200	1,405	3,494
314. Mersea		4,000	5,928	39,314
315. Metcalfe		800	465	10,045
316. Middleton		1,625	8,845	16,003
317. Minden			1,363	3,937
318. Minto	361	900	7,584	11,579
319. Monaghan, N		1,300	100	2,761
320. Monaghan, S			127	726
321. Monck			1,305	3,678
322. Monmouth	132	217	702	4,150
323. Mono			426	2,791
324. Montague		4,249	5,974	12,356
325. Monteagle and Herschel			669	5,788
326. Moore		5,900	42,182	66,195
327. Morley			969	3,301
328. Mornington			1,247	4,209
329. Morris		1,050	1,200	10,816
330. Morrison		200		1,611
331. Mosa			294	10,999
332. Moulton	4,212			4,212
333. Mountain	29,237	1,000	5,464	45,479
334. Mulmur		600		1,615
335. Murray		2,180		6,328
336. Muskoka			450	2,664
337. Nairn and Lorne		1,150		4,468
338. Nassagaweya	9,086	1,200	15	14,210
339. Neebing	23	1,798	588	13,639
340. Neelon				157
341. Nelson	15,639	1,675	1,513	31,839
342. Nepean	9,500	5,151	3,618	46,841
343. Niagara		225	54	693
344. Nichol			1,830	5,950
345. Nipissing		100	886	3,440
346. Nissouri, E			4,604	6,628
347. Nissouri, W		360	17	14,099
348. Normanby		2,003		2,319
349. Norwich, N		125	25	4,125
350. Norwich, S		2,480	353	3,115
351. Nottawasaga		1,215	2,805	12,711
352. Oakland	4,544	2,750		7,734
353. Oakley			376	1,749
354. Olden		1,000		2,632
355. Oliver	1,250	1,700	1,219	6,179
356. Oneida		1,000		2,085
357. Onondago		3,250		4,812
358. Ops		1,000	6,382	8,396
359. Orford		2,550	3,463	16,416
360. Orillia		1,300	4,310	12,498
361. Oro		1,200		8,717
362. Osgoode	15,000	3,800	4,199	35,619
363. Osnabruck		1,500	13,785	22,210
364. Oso		175	43	2,131
365. Osprey			3,366	5,273

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	1,222	.....	.....	.....	.....	877	2,099	313
3,352	672	1,226	3,797	66,794	3,994	.....	.....	13,882	93,717	314
3,621	.....	.....	.....	.....	8,189	.....	.....	308	12,118	315
.....	811	.....	1,050	7,765	.....	.....	.....	1,851	11,477	316
311	1,457	.....	1,363	.....	.....	.....	.....	.....	3,131	317
.....	7	.....	.....	7,584	.....	.....	.....	1	7,592	318
1,616	.....	.....	.....	.....	.....	.....	.....	30	1,646	319
.....	.....	.....	.....	.....	.....	95	.....	.....	95	320
.....	25	.....	1,280	.....	.....	.....	.....	139	1,444	321
235	279	.....	1,000	.....	.....	.....	.....	30	1,544	322
.....	.....	.....	426	.....	.....	.....	.....	50	476	323
.....	.....	.....	.....	.....	.....	3,259	.....	767	4,026	324
265	2,396	.....	669	.....	.....	.....	.....	427	3,757	325
3,651	1,109	.....	1,291	38,596	.....	.....	.....	13,541	58,188	326
.....	1,048	.....	969	.....	.....	712	.....	.....	2,729	327
.....	.....	24,704	1,247	9,621	.....	.....	.....	.....	35,572	328
3,364	32	3,382	1,200	3,681	.....	.....	.....	.....	11,659	329
.....	780	.....	.....	.....	.....	.....	.....	.....	780	330
4,586	350	.....	.....	4,288	.....	4,400	.....	249	13,873	331
.....	.....	.....	.....	.....	.....	1,353	.....	.....	1,353	332
.....	.....	.....	885	50,870	.....	26,259	.....	.....	78,014	333
1,128	.....	.....	.....	.....	.....	.....	.....	70	1,198	334
2,554	.....	.....	.....	.....	.....	.....	.....	30	2,584	335
.....	771	.....	450	.....	.....	.....	.....	446	1,667	336
.....	.....	.....	.....	.....	.....	155	.....	.....	155	337
.....	.....	.....	.....	.....	.....	.....	.....	45	25	338
.....	.....	.....	.....	.....	12,000	2,600	727	680	16,007	339
.....	100	.....	.....	.....	.....	.....	.....	21	121	340
.....	6	.....	.....	.....	.....	.....	.....	15	21	341
3,734	9,871	.....	2,807	3,590	13,534	.....	.....	98	33,634	342
.....	.....	.....	.....	.....	.....	.....	.....	287	287	343
2,336	.....	.....	1,719	.....	.....	.....	.....	209	4,264	344
.....	.....	.....	886	.....	.....	.....	.....	.....	886	345
.....	.....	.....	4,581	1,347	.....	.....	.....	207	6,135	346
6,604	.....	.....	.....	.....	.....	4,000	.....	90	10,694	347
.....	.....	.....	.....	.....	.....	.....	.....	137	137	348
.....	.....	.....	.....	2,695	.....	1,000	.....	83	3,778	349
.....	.....	.....	.....	198	.....	500	.....	.....	698	350
6,961	168	.....	2,761	.....	.....	.....	.....	.....	9,890	351
.....	.....	1,200	.....	.....	.....	.....	700	.....	1,900	352
.....	614	.....	376	.....	.....	.....	.....	41	1,031	353
457	257	.....	.....	.....	.....	.....	.....	158	872	354
.....	951	.....	1,219	.....	2,000	.....	.....	.....	4,170	355
.....	.....	.....	.....	.....	.....	200	.....	.....	200	356
.....	.....	.....	.....	.....	537	.....	.....	.....	537	357
.....	30	11,168	.....	6,286	.....	.....	.....	.....	17,484	358
2,290	.....	1,487	1,422	5,847	1,235	.....	.....	4,322	16,603	359
2,847	.....	.....	4,260	.....	.....	3,500	.....	425	11,032	360
4,547	.....	.....	.....	.....	.....	.....	.....	.....	4,547	361
3,428	380	.....	4,199	24,865	1,441	6,293	.....	1,632	42,238	362
2,845	.....	.....	2,436	14,337	7,350	15,735	.....	857	43,560	363
.....	366	.....	.....	.....	.....	.....	.....	427	793	364
.....	28	.....	3,366	.....	.....	.....	.....	503	3,897	365

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
366. Otonabee, Peterborough	23	24,473	....	22	39	.....	450
367. Oxford-on-Rideau, Grenville	3,433	13,141	67	13	104	.....	825
368. Oxford E., Oxford	1,627	13,200	....	.....	150	.....	.....
369. Oxford N., Oxford	1,325	8,157	140	174	24	.....	.....
370. Oxford W., Oxford	.....	12,031	....	705	.....	.....	.....
371. Paipoonge, Thunder Bay	314	5,709	140	6	.....	.....	125
372. Pakenham, Lanark	1,668	8,553	145	.....	.....	.....	.....
373. Palmerston & Canonto, Frontenac	108	2,867	24	70	.....	.....	.....
374. Papineau, Nipissing	257	921	....	.....	.....	.....	.....
375. Peel, Wellington	5,885	23,180	184	.....	.....	.....	3,216
376. Pelee Island, Essex	24	10,367	28	.....	298	6,049	2,000
377. Pelham, Welland	16	11,584	....	2	594	4,076	188
378. Pembroke, Renfrew	.....	2,050	....	.....	.....	.....	422
379. Percy, Northumberland	529	12,346	160	121	7	.....	1,000
380. Perry, Parry Sound	1,565	3,091	103	8	.....	.....	.....
381. Petewawa, Renfrew	.....	1,492	....	.....	.....	.....	171
382. Pickering, Ontario	127	29,794	324	65	.....	.....	13,578
383. Pilkington, Wellington	228	9,012	24	.....	.....	.....	500
384. Pittsburg, Frontenac	8,762	16,282	105	73	51	.....	1,300
385. Plantagenet, N., Prescott	642	14,130	352	5	.....	.....	.....
386. Plantagenet, S., Prescott	2,105	10,756	229	.....	3	.....	900
387. Plummer Additional, Algoma	230	2,366	5	5	.....	.....	600
388. Plympton, Lambton	.....	27,316	94	.....	.....	.....	.....
389. Portland, Frontenac	2,454	9,927	64	1	165	.....	.....
390. Prince, Algoma	297	946	....	.....	.....	.....	.....
391. Proton, Grey	1,907	15,682	72	1	96	228	215
392. Puslinch, Wellington	2,037	11,603	54	18	629	1,629	727
393. Radcliffe, Renfrew	57	1,031	116	5	.....	.....	.....
394. Raglan, Renfrew	239	2,008	....	20	.....	300	.....
395. Rainham, Haldimand	523	7,078	100	5	180	390	.....
396. Raleigh, Kent	.....	38,456	....	.....	.....	.....	20,852
397. Rama, Ontario	374	3,921	26	.....	.....	.....	875
398. Ramsay, Lanark	2,568	11,877	123	.....	542	.....	.....
399. Ratter and Dunnett, Nipissing	53	2,207	219	6	.....	.....	275
400. Rawdon, Hastings	950	16,392	....	4	22	.....	300
401. Rayside, Algoma	12	3,453	73	.....	.....	.....	3,285
402. Reach, Ontario	21	18,843	....	47	.....	3	6,073
403. Richmond, Lennox and Add'ton	.....	13,612	30	78	629	2,630	2,800
404. Rochester, Essex	8,859	17,680	292	32	331	.....	2,700
405. Rolph, B. and W. Renfrew	21	3,228	91	7	15	.....	.....
406. Romney, Kent	3,716	18,891	....	13	24	.....	4,628
407. Ross, Renfrew	1,081	6,262	.....	.....	2	.....	1,199
408. Roxborough, Stormont	.....	25,174	426	49	.....	5,956	22,934
409. Russell, Russell	1,287	15,027	275	10	304	7,883	.....
410. Ryde, Muskoka	448	1,596	12	20	.....	.....	.....
411. Ryerson, Parry Sound	664	2,464	2	2	.....	.....	900
412. St. Edmunds, Bruce	169	2,213	....	1	.....	.....	.....
413. St. Joseph, Algoma	625	4,069	160	29	.....	.....	400
414. St. Vincent, Grey	1,800	16,565	....	.....	17	.....	2,000
415. Salter, May and Harrow, Algoma	476	2,417	....	2	141	.....	100
416. Saltfleet, Wentworth	2,306	22,994	93	150	306	.....	2,466
417. Sandfield, Manitoulin	356	904	....	.....	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
950	.....	.....	.....	100	161	26,218	530	42	198	3,498	....	366
1,500	796	.....	10	.....	732	20,621	717	604	290	1,452	23	367
.....	4,976	.....	86	579	475	21,093	546	15	191	4,661	....	368
.....	.....	.....	.....	337	202	10,359	584	.....	221	2,141	....	369
.....	1,521	.....	.....	.....	35	14,292	894	10	171	4,078	255	370
2,400	.....	.....	.....	.....	.....	8,694	505	172	341	1,316	834	371
.....	.....	.....	.....	.....	.....	10,366	483	2	382	1,064	...	372
.....	.....	.....	.....	.....	26	3,095	283	.....	38	222	....	373
.....	.....	.....	.....	.....	.....	1,178	166	.....	17	6	....	374
.....	.....	.....	.....	.....	37	32,502	779	197	229	10,018	....	375
.....	800	.....	.....	.....	20	19,586	598	67	218	887	67	376
.....	.....	.....	.....	.....	41	16,501	485	3	225	2,819	....	377
.....	.....	.....	.....	.....	11	2,483	252	8	42	278	....	378
.....	.....	.....	.....	.....	82	14,245	595	136	400	2,543	....	379
.....	.....	.....	.....	.....	69	4,836	495	.....	100	525	....	380
.....	.....	.....	.....	.....	7	1,670	176	17	66	26	...	381
.....	.....	.....	.....	.....	188	44,076	1,567	110	766	9,962	....	382
.....	.....	.....	.....	100	92	9,956	650	10	89	1,637	....	383
.....	.....	.....	.....	.....	18	26,591	646	84	136	3,462	....	384
.....	.....	.....	.....	.....	82	15,211	507	58	178	1,790	....	385
.....	.....	.....	.....	.....	53	14,046	792	62	221	1,745	....	386
1,700	.....	.....	.....	.....	373	5,279	294	33	79	536	....	387
.....	10,059	.....	348	.....	153	37,970	927	107	193	5,686	....	388
.....	.....	.....	.....	.....	30	12,641	513	109	167	1,674	....	389
.....	.....	.....	.....	.....	.....	1,248	207	22	17	81	25	390
2,100	4,021	.....	.....	.....	562	24,884	778	22	316	3,213	....	391
.....	.....	.....	.....	.....	93	16,790	961	45	133	4,036	....	392
.....	.....	.....	.....	.....	2	1,211	171	.....	46	78	....	393
.....	.....	.....	.....	.....	7	2,574	203	.....	43	213	....	394
.....	.....	.....	.....	.....	1,018	9,294	380	11	131	1,969	....	395
.....	11,979	1,668	50	450	662	74,117	1,325	10,191	527	4,513	....	396
.....	.....	.....	.....	.....	57	5,253	686	11	223	905	152	397
.....	.....	.....	.....	.....	86	15,196	795	3	214	2,380	....	398
.....	.....	.....	.....	.....	31	2,791	287	5	104	136	....	399
.....	.....	.....	.....	.....	45	17,713	707	.....	134	917	....	400
.....	.....	.....	.....	.....	.....	6,823	350	26	63	1,032	100	401
.....	.....	.....	.....	.....	107	25,094	1,070	.....	363	5,809	....	402
.....	.....	.....	.....	.....	110	19,889	653	539	245	3,949	....	403
.....	2,049	930	34	.....	*3,167	36,074	1,055	44	623	3,200	....	404
.....	.....	.....	.....	.....	.....	3,362	243	30	61	163	....	405
.....	1,809	2,018	46	200	233	31,578	1,292	.....	274	3,183	782	406
.....	.....	2,000	.....	....	2	10,546	448	.....	198	2,800	....	407
.....	6,483	.....	.....	.....	†2,182	63,204	1,084	245	228	2,935	....	408
.....	3,808	.....	.....	.....	‡3,692	32,286	877	39	281	1,125	....	409
.....	.....	.....	.....	.....	.....	2,076	204	8	67	191	....	410
.....	.....	.....	.....	.....	28	4,060	235	10	68	1,031	....	411
.....	.....	.....	.....	.....	205	2,588	359	.....	96	300	....	412
1,700	.....	.....	3	.....	.....	6,986	406	.....	148	1,256	....	413
.....	.....	.....	.....	.....	95	20,477	920	25	371	3,973	....	414
.....	.....	.....	.....	.....	856	3,992	415	8	49	145	337	415
.....	.....	.....	.....	.....	.....	28,315	1,221	51	590	5,575	....	416
.....	.....	.....	.....	.....	7	1,267	126	.....	26	27	....	417

* Including $3,000 from Government in aid of Ruscom River drainage works.
† Including $2,000 from Government in aid of North Branch Drain.
‡ Including $3,629 from other municipalities as share of debt.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Disbursements, 1905.—*Continued.*

Townships.	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
366. Otonabee	30	351	11,245	7,603	548	.....	.....
367. Oxford-on-Rideau	4	21	4,939	8,142	154	26	.....
368. Oxford E	43	.....	2,819	3,926	2,584	.....	.....
369. Oxford N	36	15	1,718	2,746	1,180	.....	.....
370. Oxford W	99	73	2,151	4,267	452	.....	.....
371. Paipoonge	4	.....	.....	4,605	67	167	.....
372. Pakenham	15	20	2,004	3,444	.....	.....	.....
373. Palmerston and Canonto	.....	.....	633	1,638	.....	.....	.....
374. Papineau	57	.....	.....	912	.....	.....	.....
375. Peel	20	25	5,940	10,480	.....	.....	.....
376. Pelee Island	18	.....	.....	1,275	3,231	.....	5,000
377. Pelham	20	60	3,053	5,270	.....	.....	3,949
378. Pembroke	7	5	430	1,021	.....	.....	.....
379. Percy	61	106	2,241	5,931	.....	.....	.....
380. Perry	26	17	.....	2,369	.....	.....	.....
381. Petewawa	36	.....	154	1,079	.....	.....	.....
382. Pickering	142	270	6,213	10,815	.....	.....	.....
383. Pilkington	43	25	2,306	3,693	.....	.....	.....
384. Pittsburg	.....	.....	5,124	5,026	106	.....	.....
385. Plantagenet N	510	142	1,035	8,998	492	.....	.....
386. Plantagenet S	167	.....	1,027	5,545	245	59	.....
387. Plummer Additional	63	50	.....	2,706	.....	.....	.....
388. Plympton	17	92	5,074	8,608	8,426	.....	.....
389. Portland	60	163	3,792	4,547	.....	.....	.....
390. Prince	28	.....	.....	522	.....	.....	.....
391. Proton	4	6	2,404	8,451	3,596	254	.....
392. Puslinch	83	70	3,312	6,324	.....	.....	1,778
393. Radcliffe	.....	.....	81	708	.....	.....	.....
394. Raglan	28	.....	209	1,324	.....	.....	151
395. Rainham	3	158	2,320	3,066	.....	.....	390
396. Raleigh	439	324	4,636	8,287	8,577	.....	.....
397. Rama	22	34	.....	2,322	.....	.....	.....
398. Ramsay	32	22	2,861	5,079	.....	1,118	.....
399. Ratter and Dunnett	6	10	.....	1,725	.....	.....	.....
400. Rawdon	35	225	4,625	8,433	.....	.....	.....
401. Rayside	66	.....	.....	983	.....	.....	.....
402. Reach	47	130	3,840	7,736	.....	.....	.....
403. Richmond	8	311	2,955	4,972	167	.....	2,381
404. Rochester	38	155	1,831	5,742	11,523	.....	.....
405. Rolph, Buchanan and Wylie	15	.....	525	1,610	.....	115	.....
406. Romney	36	40	1,116	4,437	3,883	.....	.....
407. Ross	76	21	1,424	4,147	.....	.....	.....
408. Roxborough	76	219	1,719	8,134	15,726	.....	3,678
409. Russell	65	101	43	4,782	7,352	454	257
410. Ryde	24	5	.....	902	.....	.....	.....
411. Ryerson	21	20	.....	1,394	.....	.....	.....
412. St. Edmunds	37	.....	56	1,055	.....	.....	.....
413. St. Joseph	159	111	.....	4,125	.....	100	.....
414. St. Vincent	24	143	2,839	7,595	.....	.....	.....
415. Salter, May and Harrow	15	.....	.....	1,554	.....	170	.....
416. Saltfleet	710	276	5,183	7,686	.....	689	.....
417. Sandfield	1	26	.....	596	.....	.....	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*							Assets on December 31, 1905.			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	
95	.....	.....	450	60	14	24,664	1,554	1,849	.....	366
.....	24	.....	825	96	103	17,420	3,201	1,467	524	367
.....	849	.....	.....	308	81	16,026	5,067	758	.....	368
300	192	.....	.....	22	220	9,375	984	.....	.....	369
.....	1,080	.....	.....	189	335	14,054	238	343	.....	370
.....	.....	.....	.....	242	71	8,321	370	5,765	333	371
400	.....	624	.....	627	78	9,143	1,223	1,817	.....	372
.....	.....	100	.....	55	20	2,989	106	915	.....	373
.....	.....	.....	.....	.....	.....	1,158	20	801	.....	374
800	.....	440	3,000	296	278	32,502	.....	.....	.....	375
.....	1,800	902	3,000	1,673	488	19,224	362	7,682	.....	376
.....	.....	.....	.....	9	63	15,956	545	572	.....	377
.....	.....	.....	425	.....	15	2,483	.....	1,486	.....	378
127	.....	.....	1,000	45	246	13,431	814	813	.....	379
233	.....	.....	.....	50	70	3,885	951	3,400	.....	380
.....	.....	.....	38	.....	78	1,670	.....	508	.....	381
510	.....	1,000	11,856	439	426	44,076	.....	2,588	.....	382
196	.....	.....	600	130	82	9,461	495	5,140	.....	383
.....	.....	.....	4,194	156	196	19,130	7,461	590	.....	384
200	.....	225	.....	134	112	14,381	830	7,022	.....	385
104	21	.....	1,800	140	200	12,128	1,918	4,289	173	386
200	.....	.....	600	188	16	4,765	514	633	.....	387
109	2,434	.....	779	418	1,049	33,919	4,051	7,147	.....	388
.....	.....	.....	.....	.....	40	11,065	1,576	2,388	.....	389
.....	.....	.....	.....	.....	.....	902	341	2,600	.....	390
614	564	.....	181	392	393	21,188	3,696	2,072	2,432	391
.....	.....	.....	.....	.....	.....	16,742	48	6,404	.....	392
.....	.....	.....	.....	.....	2	1,086	125	1,280	.....	393
.....	.....	.....	.....	.....	.....	2,171	403	1,865	.....	394
.....	.....	.....	215	23	9	8,675	619	.....	.....	395
275	13,252	298	16,200	4,365	908	74,117	.....	32,063	.....	396
.....	.....	.....	700	20	34	5,149	104	3,129	.....	397
.....	.....	.....	.....	460	80	13,044	2,152	25	6,292	398
130	.....	.....	275	95	6	2,779	12	1,126	.....	399
727	.....	.....	300	247	329	16,679	1,034	5,542	.....	400
.....	.....	.....	3,609	211	8	6,448	375	2,420	.....	401
.....	.....	.....	5,800	142	148	25,085	9	122	.....	402
.....	.....	.....	2,852	57	456	19,545	344	2,422	11,400	403
274	3,799	.....	4,700	1,434	1,266	35,684	390	12,837	.....	404
.....	.....	.....	.....	56	12	2,830	532	2,597	639	405
181	5,657	1,143	5,143	2,326	1,175	30,668	910	15,475	.....	406
.....	.....	.....	600	14	244	9,972	574	3,512	.....	407
51	6,597	.....	17,938	3,803	771	63,204	.....	19,681	.....	408
19	2,416	.....	.....	1,846	447	20,104	12,182	4,703	3,068	409
175	.....	.....	.....	65	.....	1,641	435	1,015	.....	410
36	.....	.....	500	18	23	3,356	704	2,804	.....	411
.....	.....	.....	.....	.....	277	2,180	408	2,291	.....	412
68	.....	.....	300	80	60	6,813	173	2,723	500	413
382	.....	.....	2,000	182	296	18,750	1,727	83	.....	414
.....	.....	.....	310	302	73	3,408	584	1,080	810	415
.....	.....	710	2,466	648	616	26,421	1,894	1,171	3,006	416
.....	.....	.....	.....	.....	3	805	462	92	.....	417

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
366. Otonabee		3,000	855	7,258
367. Oxford-on-Rideau		6,000		11,192
368. Oxford E.		600	5,027	11,452
369. Oxford N.		260		1,244
370. Oxford W.		500	2,551	3,632
371. Paipoonge		3,017	4,067	13,552
372. Pakenham		1,300	500	4,840
373. Palmerston and Canonto		200		1,221
374. Papineau				821
375. Peel			1,647	1,647
376. Pelee Island	5,115	450	36,257	49,866
377. Pelham	18,000	4,580	553	24,250
378. Pembroke		150		1,636
379. Percy		8,460		10,087
380. Perry			613	4,964
381. Petewawa				508
382. Pickering		2,900	1,473	6,961
383. Pilkington			1,638	7,273
384. Pittsburg		2,400	1,230	11,681
385. Plantagenet, N.		2,325	2,532	12,709
386. Plantagenet, S.		800	650	7,830
387. Plummer Additional		600	4,930	6,677
388. Plympton		1,450	15,586	28,234
389. Portland	1,750	1,000		6,714
390. Prince		50		2,991
391. Proton			5,856	14,056
392. Puslinch	10,254	2,500		19,206
393. Radcliffe				1,405
394. Raglan	151			2,419
395. Rainham	4,640	750		6,009
396. Raleigh		1,000	16,354	49,417
397. Rama		1,100		4,333
398. Ramsay	8,800	500		17,769
399. Ratter and Dunnett		225	1,563	2,926
400. Rawdon	20	1,200	3,735	11,531
401. Rayside		668		3,463
402. Reach		1,875	397	2,403
403. Richmond	6,117	3,100		23,383
404. Rochester			1,770	14,997
405. Rolph, Buchanan and Wylie	7	100	761	4,636
406. Romney		1,800	6,429	24,614
407. Ross		525		4,611
408. Roxborough	3,678	500	416	24,275
409. Russell	257	1,000	1,432	22,642
410. Ryde		2,060	906	4,416
411. Ryerson		250	267	4,025
412. St. Edmunds				2,699
413. St. Joseph		2,034	2,092	7,522
414. St. Vincent			3,067	4,877
415. Salter, May and Harrow		200	690	3,364
416. Saltfleet	6,000	2,800	6,994	21,865
417. Sandfield				554

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
.....	34	.....	855	.....	.....	.....	.....	719	1,608	366
.....	.....	.....	1,500	1,604	.....	.....	.....	3,075	6,179	367
.....	6	.....	.....	5,879	.....	.....	.....	3,986	9,871	368
.....	.....	.....	.....	.....	.....	.....	.....	195	195	369
.....	.....	.....	.....	2,323	.....	.....	.....	.....	2,323	370
.....	.....	.....	4,400	.....	.....	925	.....	8,109	13,434	371
.....	.....	.....	500	.....	14,147	.....	.....	.....	14,647	372
.....	138	.....	.....	.....	1,000	.....	.....	45	1,183	373
.....	356	.....	.....	.....	.....	.....	.....	45	401	374
.....	.....	1,990	1,600	.....	.....	216	.....	40	3,846	375
165	1,651	.....	.....	18,734	5,238	5,667	.....	613	32,068	376
.....	.....	.....	.....	.....	.....	.....	416	.....	416	377
430	.....	.....	.....	.....	.....	422	.....	.....	852	378
.....	.....	.....	.....	.....	.....	.....	.....	6	6	379
.....	2,365	.....	603	.....	.....	.....	.....	73	3,041	380
152	.....	.....	.....	.....	.....	171	.....	235	558	381
.....	.....	.....	1,473	.....	1,000	3,603	.....	55	6,131	382
2,294	1,629	.....	1,638	.....	.....	1,300	.....	294	7,155	383
5,124	120	.....	.....	.....	.....	1,227	.....	165	6,636	384
1,316	4,326	.....	2,532	.....	535	.....	.....	1,042	9,751	385
1,377	2,866	.....	650	72	.....	500	.....	229	5,694	386
.....	673	.....	4,900	.....	.....	.....	.....	.....	5,573	387
.....	.....	.....	233	15,353	.....	.....	.....	5,772	21,358	388
3,660	.....	.....	.....	.....	.....	.....	.....	.....	3,660	389
.....	206	.....	.....	.....	.....	.....	.....	.....	206	390
.....	.....	.....	5,175	8,618	.....	.....	215	573	14,581	391
3,294	.....	.....	.....	.....	.....	727	.....	160	4,171	392
106	998	.....	.....	.....	.....	.....	.....	.....	1,104	393
99	1,550	.....	.....	.....	.....	.....	.....	195	1,844	394
.....	.....	.....	.....	.....	.....	.....	200	1,000	1,200	395
4,636	.....	6,751	.....	73,283	1,668	20,852	.....	8,589	115,779	396
522	.....	.....	.....	.....	.....	1,875	.....	.....	2,397	397
.....	325	.....	.....	.....	11,500	.....	.....	.....	11,825	398
.....	656	.....	1,513	.....	.....	.....	.....	65	2,234	399
4,795	376	.....	3,715	.....	.....	.....	.....	.....	8,886	400
.....	1,441	.....	.....	.....	.....	867	.....	.....	2,308	401
.....	.....	.....	.....	.....	.....	273	.....	230	503	402
3,201	117	.....	.....	.....	.....	.....	2,200	.....	5,518	403
1,791	3,817	.....	1,466	20,985	930	.....	.....	995	29,984	404
371	1,373	.....	1,400	.....	.....	.....	.....	258	3,402	405
1,116	973	7,605	4,476	23,647	7,560	4,628	.....	4,782	54,787	406
1,855	.....	.....	.....	.....	2,000	600	.....	20	4,475	407
2,760	3,639	.....	222	73,177	.....	17,179	.....	4,202	101,179	408
1,577	1,100	10,000	.....	38,797	.....	.....	.....	1,243	52,717	409
.....	500	.....	906	.....	.....	.....	.....	100	1,506	410
.....	1,369	.....	267	.....	.....	432	.....	520	2,588	411
.....	.....	.....	.....	.....	.....	.....	.....	43	43	412
.....	.....	.....	2,092	.....	1,000	300	100	1,191	4,683	413
.....	.....	.....	3,059	.....	.....	.....	.....	21	3,080	414
.....	108	.....	1,500	.....	.....	.....	.....	.....	1,608	415
.....	.....	.....	10,000	.....	820	.....	.....	.....	10,820	416
.....	77	.....	.....	.....	.....	.....	.....	2	79	417

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Township Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
418. Sandwich E., Essex	1,222	14,576	723	.....	.....	.....	.....
419. Sandwich S., Essex	2,424	12,301	156	.....	99	.....	3,000
420. Sandwich W., Essex	1,716	11,343	566	.....	.....	.....	1,749
421. Sarawak, Grey	1,447	7,698	.....	1	254	1,700	2,510
422. Sarnia, Lambton	.....	17,411	60	2	166	.....	.....
423. Saugeen, Bruce	225	8,048	12	.....	.....	.....	600
424. Scarborough, York	37	20,208	343	.....	558	.....	366
425. Schreiber, Thunder Bay	619	3,399	212	45	.....	.....	200
426. Scott, Ontario	1,283	11,166	42	.....	191	.....	1,900
427. Scugog, Ontario	364	2,287	.....	.....	.....	.....	.....
428. Sebastopol, Renfrew	189	1,401	12	.....	.....	.....	.....
429. Seneca, Haldimand	1,470	9,975	88	2	20	.....	.....
430. Seymour, Northumberland	1,177	16,129	10	14	.....	.....	7,230
431. Sheffield, Lennox and Addington	.....	8,797	129	5	.....	.....	.....
432. Sherbourne, McClintock, etc., Halib'n	.....	1,434	268	21	.....	5	200
433. Sherbrooke, Haldimand	41	1,307	16	.....	115	184	360
434. Sherbrooke S., Lanark	503	2,293	31	34	.....	.....	.....
435. Shuniah, Thunder Bay	3,297	3,424	.....	.....	21	224	900
436. Sidney, Hastings	1,246	23,012	83	.....	.....	.....	2,978
437. Smith, Peterborough	1,364	14,316	.....	.....	118	.....	.....
438. Snowdon, Haliburton	.....	2,398	.....	.....	.....	.....	.....
439. Sombra, Lambton	1,768	27,305	360	7	4	.....	.....
440. Somerville, Victoria	416	6,867	18	.....	327	100	719
441. Sophiasburg, Prince Edward	479	9,417	30	26	101	103	200
442. Southwold, Elgin	9,430	25,091	50	5	14	.....	4,000
443. Springer, Nipissing	.....	3,388	103	50	.....	.....	5,421
444. Stafford, Renfrew	954	3,482	.....	.....	.....	.....	.....
445. Stamford, Welland	1,933	14,051	107	153	39	.....	3,000
446. Stanhope, Haliburton	291	1,043	.....	.....	.....	.....	.....
447. Stanley, Huron	1,380	14,823	65	11	19	779	1,580
448. Stephen, Huron	1,423	16,403	275	65	.....	.....	3,000
449. Stephenson, Muskoka	32	3,535	44	47	65	512	600
450. Stisted, Muskoka	449	2,295	.....	.....	10	240	.....
451. Storrington, Frontenac	320	9,410	.....	16	.....	.....	.....
452. Strong, Parry Sound	639	2,027	2	.....	.....	.....	.....
453. Sullivan, Grey	1,082	13,984	28	26	.....	.....	1,600
454. Sunnidale, Simcoe	2,844	10,734	60	237	.....	.....	2,890
455. Sydenham, Grey	358	17,198	72	10	.....	.....	4,055
456. Tarentorus, Algoma	286	5,407	.....	6	.....	.....	3,183
457. Tay, Simcoe	1,975	16,059	134	.....	146	.....	.....
458. Tecumseth, Simcoe	2,870	21,980	44	8	41	.....	2,000
459. Tehkummah, Manitoulin	1,173	1,602	.....	.....	.....	.....	.....
460. Thessalon, Algoma	1,361	1,955	5	.....	.....	.....	.....
461. Thompson, Algoma	.....	720	30	17	.....	.....	300
462. Thorah, Ontario	94	7,378	.....	20	1,499	.....	2,500
463. Thorold, Welland	970	8,302	96	2	.....	.....	.....
464. Thurlow, Hastings	1,311	18,626	85	6	78	.....	1,000
465. Tilbury E., Kent	3,796	31,754	.....	4	228	.....	24,763
466. Tilbury N., Essex	688	14,534	135	3	48	.....	2,814
467. Tilbury W., Essex	11,383	15,993	538	25	217	.....	.....
468. Tiny, Simcoe	..	15,527	27	.....	..	.....	1,300
469. Torbolton, Carleton	54	3,293	.....	.....	.....	.....	709

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	2,233	517	21	.....	900	20,192	1,031	150	318	1,922	50	418
.....	.....	.....	.....	.....	195	18,175	566	144	269	1,829	.....	419
.....	.....	.....	.....	.....	111	15,485	769	48	190	2,934	.....	420
1,200	.....	2,000	.....	.....	223	17,033	501	16	288	3,612	.....	421
.....	8,910	.....	341	.....	1,609	28,499	881	39	211	2,453	.....	422
.....	925	.....	.....	119	106	10,035	475	3	168	1,013	.....	423
.....	.....	.....	.....	.....	160	21,672	1,410	5	325	5,737	.....	424
.....	.....	.....	.....	.....	.....	4,475	185	.....	76	79	.....	425
.....	.....	.....	.....	.....	.....	14,582	798	2	266	3,113	.....	426
.....	.....	.....	.....	.....	.....	2,651	155	.....	48	310	.....	427
.....	.....	.....	.....	.....	.....	1,602	159	.....	48	32	.....	428
.....	.....	.....	.....	.....	23	11,578	571	33	189	2,748	.....	429
.....	.....	.....	.....	.....	68	24,628	859	356	256	4,750	250	430
.....	.....	.....	.....	.....	8	8,939	612	.....	214	1,156	.....	431
.....	.....	.....	.....	.....	81	2,009	335	.....	77	200	.....	432
.....	.....	.....	.....	.....	.....	2,023	108	.....	41	59	.....	433
.....	.....	.....	.....	.....	.....	2,861	316	5	68	550	.....	434
.....	.....	.....	.....	.....	68	7,934	718	.....	263	1,782	.....	435
.....	.....	.....	.....	97	536	27,952	1,150	126	321	3,879	.....	436
.....	.....	.....	.....	.....	12	15,810	704	.....	235	3,501	.....	437
.....	.....	.....	.....	.....	74	2,472	250	8	60	226	.....	438
.....	11,875	.....	135	200	653	42,307	1,252	401	202	5,111	.....	439
.....	.....	.....	.....	.....	486	8,933	579	20	136	1,282	21	440
.....	.....	.....	.....	.....	3	10,359	416	.....	223	959	.....	441
.....	.....	.....	.....	.....	66	38,656	1,301	194	343	7,655	.....	442
.....	.....	.....	.....	.....	444	9,406	514	120	104	920	.....	443
.....	.....	.....	.....	.....	221	4,657	280	.....	54	564	.....	444
.....	.....	.....	.....	.....	7	19,290	628	25	305	5,375	209	445
.....	.....	.....	.....	4	56	1,394	208	10	69	76	.....	446
.....	3,300	.....	.....	.....	444	22,401	651	22	126	4,165	.....	447
.....	.....	.....	.....	.....	423	21,589	806	145	539	3,487	12	448
.....	.....	.....	.....	.....	200	5,035	393	17	134	942	.....	449
.....	.....	.....	.....	.....	257	3,251	328	.....	66	731	.....	450
.....	.....	.....	.....	.....	40	9,786	400	75	190	887	.....	451
.....	.....	.....	.....	.....	55	2,723	291	2	66	401	97	452
.....	.....	.....	.....	81	96	16,897	627	2	161	2,440	.....	453
.....	.....	.....	.....	.....	393	17,158	1,054	92	205	2,196	.....	454
2,000	.....	.....	154	.....	260	24,107	1,010	40	339	4,777	.....	455
.....	.....	.....	.....	.....	339	9,221	695	137	235	3,180	312	456
1,200	.....	.....	.....	.....	24	19,538	1,040	50	317	1,657	201	457
.....	.....	.....	.....	.....	132	27,075	653	.....	291	5,403	.....	458
.....	.....	.....	.....	.....	4	2,779	200	.....	58	501	.....	459
.....	.....	.....	.....	.....	30	3,351	348	8	86	591	.....	460
.....	.....	.....	.....	.....	25	1,092	35	77	88	45	250	461
.....	.....	.....	.....	.....	459	11,950	713	.....	221	2,473	.....	462
.....	.....	.....	.....	.....	.....	9,370	578	15	213	595	.....	463
.....	.....	.....	.....	.....	13	21,119	768	.....	354	1,252	.....	464
.....	12,344	.....	506	.....	*7,076	80,471	1,717	960	1,306	9,083	.....	465
.....	347	.....	.....	.....	450	19,019	977	53	945	1,391	.....	466
.....	.....	.....	.....	.....	525	28,681	1,055	349	682	2,067	111	467
.....	.....	.....	.....	.....	351	17,205	1,000	.....	156	1,247	.....	468
.....	.....	.....	.....	.....	.....	4,056	167	.....	74	703	.....	469

* Including $2,000 from Government in aid of drainage works, and $3,611 on account of Treasurer's shortage.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Disbursements, 1905.—*Continued.*						
	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
418. Sandwich E.	167	399	1,529	4,886	5,251		
419. Sandwich S.	15	194	1,328	3,392	6,718		
420. Sandwich W.	50	240	1,542	4,954			
421. Sarawak	36	58	580	3,701	14	2,240	147
422. Sarnia	291	263	1,844	4,303	6,675		
423. Saugeen	7		1,624	2,948	466		91
424. Scarborough	60	137	4,417	7,386			
425. Schreiber				2,500			
426. Scott	53	106	2,380	4,844			
427. Scugog	5		592	1,231			
428. Sebastopol		5	150	972			
429. Seneca	38	53	2,989	4,137			
430. Seymour	413	30	2,984	5,777			
431. Sheffield	7	94	1,769	4,000			
432. Sherbourne, McClintock, etc.	9	5	121	636			
433. Sherbrooke			407	417	3		273
434. Sherbrooke S.	13	4	348	1,151			
435. Shuniah		20		425		2,022	100
436. Sidney	214	443	8,011	10,751			
437. Smith	6	306	4,257	5,276			
438. Snowdon		7	120	1,140			
439. Sombra	45	404	3,765	9,127	13,143		
440. Somerville	48	65	600	4,277		727	
441. Sophiasburg	14	268	2,467	5,129			103
442 Southwold	87	15	7,097	8,046	2,877		
443. Springer		45		1,532			
444. Stafford	8		979	1,706			
445. Stamford	107	79	2,499	4,523			
446. Stanhope	4	38	215	686			
447. Stanley	44	15	3,484	5,380	2,449		
448. Stephen	101	67	2,593	7,512	287		
449. Stephenson	15	16		2,043			
450. Stisted	12	87		1,325			
451. Storrington			3,994	3,774			
452. Strong	5	5		1,460			
453. Sullivan	46	142	2,642	7,155			
454. Sunnidale	45	42	2,167	5,123	252		
455. Sydenham	54	158	2,426	9,899			
456. Tarentorus	13	21		800			
457. Tay	24	192	2,247	7,802			
458. Tecumseth	6	40	6,035	8,168			
459. Tehkummah		5		715			
460. Thessalon	42	14		880			
461 Thompson				286			
462. Thorah	103	57	1,484	2,087	137	34	
463. Thorald	10	4	2,644	4,074			
464. Thurlow	34	1,337	5,878	7,667			
465. Tilbury E.	133	820	2,299	5,448	15,920		
466. Tilbury N.	22	289	1,374	5,293	2,912		
467. Tilbury W.	31	27	1,461	4,417	7,727		
468. Tiny	30	70	2,671	5,913			
469. Torbolton	30		614	1,751			

MUNICIPALITIES, FOR THE YEAR 1905 —*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued*

Disbursements, 1905.—*Continued.*							Assets on December 31, 1905.			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	
.....	2,779	.....	.....	1,080	186	19,748	444	14,917	.....	418
.....	2,676	.....	.....	640	124	17,895	280	9,863	.....	419
.....	784	.....	2,795	175	394	14,875	610	11,931	.....	420
142	.....	609	2,828	716	36	15,524	1,509	1,492	5,014	421
344	3,668	.....	1,241	1,464	329	24,006	4,493	2,454	.....	422
.....	.....	.....	600	.....	103	7,498	2,537	.....	.....	423
501	.....	.....	963	475	105	21,521	151	1,218	.....	424
116	.....	.....	954	366	21	4,297	178	111	.....	425
.....	.....	.....	1,900	55	63	13,580	1,002	37	.....	426
.....	.....	.....	.....	.....	17	2,358	203	50	.....	427
.....	.....	.....	.....	.....	.....	1,366	236	128	.....	428
.....	.....	.....	.....	.....	57	10,815	763	119	.....	429
.....	.....	.....	7,980	101	422	24,178	450	305	.....	430
.....	.....	347	27	278	71	8,575	364	1,003	.....	431
59	.....	.....	207	63	4	1,716	293	313	.....	432
.....	.....	.....	360	.....	.....	1,668	355	200	.....	433
.....	.....	.....	.....	.....	102	2,557	304	604	.....	434
.....	.....	.....	800	391	600	7,121	813	3,552	4,339	435
.....	.....	.....	2,800	115	142	27,952	.....	10,060	.....	436
200	.....	.....	.....	40	105	14,630	1,180	1,464	.....	437
51	.....	.....	281	4	265	2,412	60	2,337	.....	438
.....	5,353	1,120	.....	1,223	348	41,494	813	27,032	.....	439
381	.....	.....	.....	616	181	8,933	.....	6,801	9,142	440
.....	.....	.....	200	.....	132	9,911	448	372	.....	441
188	990	.....	4,000	326	189	33,308	5,348	4,260	.....	442
.....	.....	128	4,626	215	275	8,479	927	3,841	.....	443
.....	.....	.....	.....	.....	5	3,546	1,111	927	.....	444
435	.....	.....	3,000	250	182	17,617	1,673	6,425	.....	445
32	.....	.....	.....	8	1	1,347	47	745	.....	446
.....	550	.....	3,850	254	140	21,130	1,271	38	.....	447
230	.....	107	3,000	205	30	19,121	2,468	424	.....	448
550	.....	.....	700	94	59	4,963	72	2,251	740	449
240	.....	.....	.....	28	12	2,829	422	1,423	.....	450
250	.....	.....	.....	23	71	9,664	122	1,338	.....	451
.....	.....	.....	.....	.....	46	2,373	350	990	.....	452
52	.....	.....	1,600	47	49	14,963	1,934	243	.....	453
80	210	.....	2,500	237	25	14,228	2,930	.....	.....	454
84	.....	.....	4,055	80	144	23,066	1,041	22	.....	455
.....	.....	.....	3,000	69	299	8,761	460	7,293	.....	456
365	.....	.....	.....	102	283	14,280	5,258	13,118	.....	457
.....	381	.....	2,000	355	248	23,580	3,495	658	.....	458
.....	.....	.....	206	.....	43	1,728	1,051	432	.....	459
98	.....	91	.....	177	51	2,386	965	1,658	.....	460
.....	.....	.....	100	3	25	909	183	83	.....	461
.....	.....	1,000	3,000	317	319	11,945	5	466	188	462
.....	.....	.....	.....	4	162	8,299	1,071	3,876	.....	463
432	.....	.....	1,000	98	42	18,862	2,257	6,922	.....	464
518	10,026	583	19,429	7,387	*4,585	80,214	257	40,330	.....	465
.....	3,485	.....	.....	1,523	755	19,019	.....	12,084	.....	466
190	6,566	727	.....	1,093	377	26,880	1,801	13,005	.....	467
.....	184	734	3,308	1,891	1	17,205	.....	6,350	.....	468
.....	.....	.....	702	14	1	4,056	.....	2,374	.....	469

* Including $3.611 adjustment on account of Treasurer's shortage.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
418. Sandwich E.	.....	500	2,697	18,558
419. Sandwich S.	.....	1,450	5,822	17,415
420. Sandwich W.	.....	1,000	.....	13,541
421. Sarawak.	2,920	3,198	1,662	15,795
422. Sarnia.	.....	1,000	19,517	27,464
423. Saugeen	91	.....	45	2,673
424. Scarborough	13,129	1,110	6,330	21,938
425. Schreiber	.....	150	5,775	6,214
426. Scott	4,761	980	.....	6,780
427. Scugog	.....	1,470	.....	1,813
428. Sebastopol	.....	.....	.....	364
429. Seneca	.....	2,000	40	2,922
430. Seymour	.....	.....	714	1,469
431. Sheffield	.....	2,000	.....	3,367
432. Sherbourne, McClintock, etc.	.....	910	1,015	2,531
433. Sherbrooke	1,953	500	.....	3,008
434. Sherbrooke S.	.....	.....	.....	908
435. Shuniah	297	1,500	16	10,517
436. Sidney	.....	1,000	.....	11,060
437. Smith	.....	.....	600	3,244
438. Snowdon	.....	370	.....	2,767
439. Sombra	.....	3,550	32,524	63,919
440. Somerville	.....	300	2,439	18,682
441. Sophiasburg	3,521	3,500	.....	7,841
442. Southwold	.....	800	596	11,004
443. Springer	.....	180	748	5,696
444. Stafford	.....	525	.....	2,563
445. Stamford	.....	4,850	3,744	16,692
446. Stanhope	.....	.....	166	958
447. Stanley	.....	1,000	428	2,737
448. Stephen	.....	1,500	2,087	6,479
449. Stephenson	.....	1,250	674	4,987
450. Stisted	.....	250	180	2,275
451. Storrington	.....	1,000	260	2,720
452. Strong	.....	444	11	1,795
453. Sullivan	.....	1,825	255	4,257
454. Sunnidale	.....	600	1,135	4,665
455. Sydenham	.....	500	2,088	3,651
456. Tarentorus	.....	2,419	.....	10,172
457. Tay	.....	410	2,870	21,656
458. Tecumseth	.....	.....	7,264	11,417
459. Tehkummah	.....	.....	.....	1,483
460. Thessalon	.....	600	542	3,765
461. Thompson	.....	280	.....	546
462. Thorah	50,000	1,275	.....	51,934
463. Thorald	.....	.....	.....	4,947
464. Thurlow	.....	2,000	1,418	12,597
465. Tilbury E.	.....	4,560	23,797	68,944
466. Tilbury N.	.....	.....	850	12,934
467. Tilbury W.	.....	2,000	6,859	23,665
468. Tiny	.....	.....	4,974	11,324
469. Torbotton	.....	.....	.....	2,374

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Liabilities on December 31, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
1,529	5,100	.....	.....	12,783	517	3,000	.....	.....	22,929	418
1,328	2,597	.....	.....	9,261	.....	3,000	.....	2,270	18,456	419
1,279	5,574	.....	.....	2,922	.....	.....	.....	2,392	12,167	420
.....	.....	7,500	1,662	.....	7,112	200	.....	.....	16,474	421
.....	.....	.....	2,165	24,727	.....	.....	.....	5,044	31,936	422
.....	.....	.....	.....	925	.....	.....	.....	1,107	2,032	423
.....	.....	.....	6,330	.....	.....	366	.....	.....	6,696	424
.....	.....	.....	5,775	.....	.....	.....	.....	.....	5,775	425
.....	.....	.....	.....	385	.....	.....	.....	.....	385	426
.....	.....	.....	.....	.....	.....	.....	.....	3	3	427
196	.....	.....	.....	.....	.....	.....	.....	60	256	428
.....	84	.....	.....	.....	.....	.....	.....	.....	84	429
.....	.....	.....	.....	.....	.....	.....	.....	854	854	430
.....	.....	.....	.....	.....	6,607	.....	.....	512	7,119	431
4	199	.....	963	.....	.....	.....	.....	34	1,200	432
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	433
.....	105	.....	.....	.....	.....	.....	.....	.....	105	434
.....	.....	.....	.....	.....	7,500	.....	1,600	117	9,217	435
8,306	.....	.....	.....	.....	.....	178	.....	.....	8,484	436
.....	39	.....	600	.....	.....	.....	.....	99	738	437
500	1,400	.....	.....	.....	.....	.....	.....	14	1,914	438
2,477	7,322	.....	1,183	36,431	.....	.....	.....	5,092	52,505	439
622	1,549	10,000	2,439	.....	.....	719	.....	.....	15,329	440
.....	.....	.....	.....	.....	.....	.....	.....	131	131	441
6,389	49	.....	.....	4,024	.....	.....	.....	640	11,102	442
.....	1,601	.....	.....	.....	2,133	2,731	.....	.....	6,465	443
1,035	14	.....	.....	.....	.....	.....	.....	130	1,179	444
.....	4,224	.....	3,714	.....	.....	.....	.....	135	8,073	445
.....	422	.....	109	.....	.....	.....	.....	45	576	446
.....	.....	.....	.....	2,750	.....	630	.....	.....	3,380	447
3,695	.....	.....	1,720	.....	351	.....	.....	.....	5,766	418
.....	787	.....	640	.....	.....	614	.....	205	2,246	449
.....	.....	.....	180	.....	.....	.....	.....	.....	180	450
.....	34	.....	260	.....	.....	.....	.....	.....	294	451
.....	466	.....	.....	.....	.....	.....	.....	.....	466	452
.....	.....	.....	248	.....	.....	.....	.....	175	423	453
2,396	566	.....	1,035	2,527	.....	390	.....	.....	6,914	454
.....	10	.....	2,088	.....	.....	.....	.....	840	2,938	455
.....	.....	.....	.....	.....	.....	183	.....	.....	183	456
2,562	6,275	.....	2,870	.....	.....	.....	.....	300	12,007	457
.....	.....	.....	.....	7,264	.....	.....	.....	110	7,374	458
.....	547	.....	.....	.....	.....	.....	.....	.....	547	459
.....	.....	.....	447	.....	2,909	.....	.....	.....	3,356	460
.....	210	.....	.....	.....	.....	200	.....	.....	410	461
.....	.....	3,000	.....	.....	.....	.....	.....	.....	3,000	462
689	2,215	.....	.....	.....	.....	.....	.....	369	3,273	463
6,066	1,056	.....	1,418	.....	.....	.....	.....	99	8,639	464
2,401	1,685	3,376	1,245	143,062	4,150	24,763	.....	12,110	195,792	465
1,374	1,428	.....	.....	27,496	.....	2,814	.....	.....	33,112	466
1,207	3,939	.....	629	21,101	754	.....	.....	2,788	30,418	467
.....	.....	41,343	.....	2,016	.....	300	.....	.....	43,659	468
614	1,091	.....	.....	.....	.....	209	.....	270	2,184	469

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Township Municipalities and Counties in which located.	Receipts on 31 December, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Interest and dividends.	Refund of money invested.	Borrowed for current expenses.
	$	$	$	$	$	$	$
470. Toronto, Peel	2,814	23,712	186	5	1,102	11,538	1,000
471. Toronto Gore, Peel	16	6,904	33	.....	151	19	1,462
472. Tossorontio, Simcoe	1,079	8,444	38	.....	.....	.....	793
473. Townsend, Norfolk	2,829	18,822	....	77	46	.....	.....
474. Trafalgar, Halton	52	16,695	30	2	1,971	.....	6,600
475. Tuckersmith, Huron	541	16,004	60	.....	918	.....	4,562
476. Tudor and Cashel, Hastings	411	2,721	40	7	.....	.....	.....
477. Turnberry, Huron	988	9,466	16	.....	12	.....	1,300
478. Tyendinaga, Hastings	3,137	15,904	105	.....	29	.....	.....
479. Usborne, Huron	2,029	23,183	35	35	.....	.....	500
480. Uxbridge, Ontario	107	12,050	48	42	486	.....	4,500
481. Van Horne, Rainy River	348	1,468	84	.....	.....	.....	.....
482. Vaughan, York	7,953	27,132	230	.....	1,982	8,995	.....
483. Verulam, Victoria	6,123	9,208	....	.....	.....	1,757	.....
484. Vespra, Simcoe	3,520	13,647	....	.....	68	.....	.....
485. Wainfleet, Welland	2,028	13,620	32	421	845	.....	2,000
486. Wallace, Perth	410	13,952	28	32	373	8,310	1,529
487. Walpole, Haldimand	563	22,990	64	9	14	.....	500
488. Walsingham N., Norfolk	505	11,492	24	.....	128	.....	1,500
489. Walsingham S., Norfolk	.....	13,111	24	6	.....	.....	3,679
490. Warwick, Lambton	1,550	16,618	....	5	4	.....	2,991
491. Waterloo, Waterloo	858	30,287	285	3	1,195	12,165	.....
492. Waters, Algoma	280	723	....	1	.....	.....	.....
493. Watt, Muskoka	199	3,303	15	10	.....	.....	200
494. Wawanosh E., Huron	2,122	9,534	37	.....	10	.....	1,000
495. Wawanosh W., Huron	534	11,665	....	.....	17	.....	3,950
496. Wellesley, Waterloo	2,081	25,303	462	.....	450	2,305	1,702
497. Westmeath, Renfrew	2	13,306	346	.....	.....	.....	1,000
498. Westminster, Middlesex	6,838	31,604	70	5	21	.....	7,400
499. Whitby E., Ontario	530	13,403	128	46	160	.....	3,400
500. Whitby, Ontario	160	12,624	128	.....	.....	.....	6,000
501. Whitchurch, York	1,496	13,674	....	.....	507	208	2,000
502. Widdifield, Nipissing	230	2,886	49	1	.....	.....	1,888
503. Wilberforce and Algona N., Renfrew	980	6,212	75	12	.....	.....	.....
504. Williams E., Middlesex	5,438	13,387	....	10	32	.....	987
505. Williams W., Middlesex	1,876	11,316	....	1	.....	.....	3,650
506. Williamsburg, Dundas	1,462	20,489	....	2	.....	3,198	.....
507. Willoughby, Welland	1,469	4,574	72	12	.....	.....	.....
508. Wilmot, Waterloo	5,431	23,481	361	3	.....	.....	4,000
509. Winchester, Dundas	1,480	28,077	....	.....	1,473	48,343	2,663
510. Windham, Norfolk	2,155	17,592	4	.....	.....	88	.....
511. Wolfe Island, Frontenac	126	10,431	44	.....	91	.....	786
512. Wolford, Grenville	1,280	8,915	30	2	.....	.....	.....
513. Wollaston, Hastings	194	2,717	....	4	.....	.....	.....
514. Woodhouse, Norfolk	1,637	10,974	14	.....	36	.....	.....
515. Woolwich, Waterloo	13,262	24,018	192	5	456	856	.....
516. Yarmouth, Elgin	.....	35,614	8	60	41	.....	24,814
517. Yonge and Escott Front, Leeds	.....	14,073	286	18	.....	.....	3,000
518. Yonge and Escott Rear, Leeds	497	6,675	51	.....	283	13,573	1,144
519. York, York	15,414	94,752	469	9	2,771	2,045	1,569
520. Zone, Kent	89	10,446	....	10	46	.....	6,000
521. Zorra E., Oxford	2,838	28,595	63	179	57	.....	9,851
522. Zorra W., Oxford	7,184	19,185	....	25	475	2,400	2,400

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed on debentures for schools.	Borrowed on debentures for drainage.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Law costs.	Other expenses of municipal government.	Roads and bridges.	Buildings and other works.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	117	40,474	1,364	109	359	4,410	.....	470
.....	.....	.....	.....	.....	116	8,701	561	73	102	2,486	.....	471
.....	.....	.....	.....	.....	397	10,751	595	.....	161	2,626	.....	472
.....	.....	.....	.....	.....	1,074	22,848	1,030	38	222	4,181	.....	473
.....	.....	.....	.....	.....	54	25,404	1,077	6	290	6,292	.....	474
1,000	.....	1,500	.....	.....	748	25,333	796	22	202	7,180	1,192	475
.....	.....	.....	.....	225	15	3,419	364	.....	145	667	.....	476
.....	880	.....	.....	.....	45	12,707	694	52	162	2,670	.....	477
.....	.....	.....	.....	.....	7	19,182	1,101	.....	321	966	.....	478
.....	.....	.....	.....	.....	365	26,147	567	1	100	6,126	.....	479
.....	.....	.....	.....	.....	153	17,386	900	5	348	1,633	.....	480
.....	.....	.....	.....	.....	10	1,910	281	.....	76	128	58	481
.....	.....	.....	.....	.....	298	46,590	1,654	559	590	11,807	.....	482
.....	.....	.....	.....	.....	77	17,165	616	38	176	1,946	.....	483
.....	.....	.....	.....	.....	.....	17,235	897	48	205	2,210	.....	484
1,450	314	.....	.....	.....	37	20,747	845	47	323	4,969	.....	485
.....	.....	.....	.....	332	98	25,064	778	15	220	1,877	.....	486
.....	.....	2,000	.....	.....	13	26,153	871	328	291	3,486	.....	487
.....	.....	.....	.....	.....	149	13,798	592	6	135	2,132	.....	488
.....	.....	.....	.....	.....	821	17,641	606	14	213	1,180	.....	489
.....	3,412	.....	.....	.....	339	24,919	791	44	294	5,499	.....	490
.....	.....	.....	.....	.....	42	44,835	1,389	165	354	4,242	128	491
.....	.....	.....	.....	.....	.....	1,004	184	.....	28	102	.....	492
.....	.....	.....	.....	.....	32	3,759	277	.....	87	730	.....	493
.....	.....	.....	.....	.....	52	12,755	560	.....	89	1,330	.....	494
.....	.....	.....	.....	.....	184	16,350	667	3	169	3,866	.....	495
.....	.....	12,000	.....	.....	12	44,315	1,121	15	387	6,100	.....	496
.....	.....	.....	.....	.....	90	14,744	663	14	497	3,302	.....	497
.....	612	.....	.....	250	196	46,996	1,487	24	258	7,554	.....	498
.....	.....	.....	.....	.....	23	17,690	820	8	177	3,348	.....	499
.....	.....	.....	.....	.....	36	18,948	840	.....	170	4,020	.....	500
.....	.....	.....	.....	.....	143	18,028	981	250	206	2,353	33	501
.....	.....	.....	.....	.....	.....	5,054	435	504	85	887	.....	502
.....	.....	.....	.....	.....	38	7,317	631	33	161	1,079	.....	503
.....	.....	.....	.....	2	127	19,983	569	223	199	3,511	.....	504
.....	.....	.....	.....	.....	106	16,949	409	5	119	2,563	.....	505
.....	7,319	.....	76	.....	*4,796	37,342	658	50	332	4,731	.....	506
.....	.....	.....	.....	.....	.....	6,127	226	.....	81	386	.....	507
.....	.....	.....	.....	.....	29	33,305	1,411	4	243	9,156	.....	508
.....	4,278	.....	.....	.....	†3,140	89,454	879	85	435	8,868	...	509
.....	.....	.....	.....	585	1,478	21,902	873	38	188	3,172	3,650	510
.....	.....	.....	.....	.....	.....	11,478	560	.....	99	1,514	.....	511
.....	.....	.....	.....	.....	34	10,261	494	.....	175	991	....	512
.....	.....	.....	.....	210	.....	3,125	289	.....	67	597	....	513
.....	.....	.....	.....	.....	434	13,095	571	16	118	2,734	...	514
.....	.....	.....	.....	.....	98	38,887	1,485	53	630	14,405	....	515
.....	.....	.....	.....	.....	330	60,867	1,759	692	725	11,320	735	516
.....	.....	.....	.....	.....	62	17,439	651	272	362	3,155	35	517
.....	.....	.....	.....	.....	28	22,251	231	8	122	912	.....	518
13,500	.....	.....	417	.....	189	131,135	7,773	814	2,302	31,755	292	519
.....	2,498	.....	.....	100	473	19,662	779	43	180	1,845	.....	520
2,000	.....	.....	.....	958	595	45,136	923	74	311	12,693	937	521
.....	8,673	.....	.....	919	192	41,453	906	124	388	7,911	....	522

* Including $4,037 from other municipalities as share of drainage debt.
† Including $2,713 grant from Government for drains, etc.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS

Disbursements, 1905.—*Continued.*

Townships.	Board of Health.	Support of the poor and other charities.	County Treasurer for levies.	Payment on account of schools and education.	Drainage works.	Sinking Fund investments and deposits.	Other investments and deposits.
	$	$	$	$	$	$	$
470. Toronto	133	52	5,850	9,364	.....	.....	11,588
471. Toronto Gore	....	13	1,707	1,842	.....	.....	17
472. Tossorontio	12	66	2,081	3,917	.....	.....	.....
473. Townsend	61	83	5,700	8,511	.....	.....	.....
474. Trafalgar	77	316	3,082	8,596	.....	.....	.....
475. Tuckersmith	489	10	3,654	5,990	270	.....	.....
476. Tudor and Cashel	....	26	185	1,845	.....	.....	.....
477. Turnberry	62	9	1,482	4,443	41	.....	.....
478. Tyendinaga	243	443	5,793	7,414	.....	.....	.....
479. Usborne	27	37	3,827	5,177	5,012	.....	.....
480. Uxbridge	56	132	1,806	5,324	.....	1,346	.....
481. Van Horne	15	.....	.....	800	.....	.....	.....
482. Vaughan	....	23	6,529	10,818	.....	.....	8,995
483. Verulam	78	159	3,731	4,602	.....	199	.....
484. Vespra	27	60	2,665	6,605	316	.....	.....
485. Wainfleet	44	6	3,580	6,780	1,992	.....	.....
486. Wallace	89	5	3,485	5,165	245	9,322	.....
487. Walpole	19	676	6,293	9,789	.....	.....	.....
488. Walsingham N	2	5	1,375	6,229	150	.....	.....
489. Walsingham S	14	24	1,740	3,716	.....	.....	.....
490. Warwick	23	209	2,000	8,003	3,010	.....	.....
491. Waterloo	261	94	6,228	16,102	.....	.....	12,165
492. Waters	10	.....	.....	485	.....	.....	.....
493. Watt	16	21	.....	1,487	.....	.....	.....
494. Wawanosh E	13	5	1,727	4,538	.....	.....	.....
495. Wawanosh W	32	15	1,904	4,404	.....	.....	.....
496. Wellesley	183	49	4,493	13,070	405	.....	1,900
497. Westmeath	332	63	1,888	6,383	.....	.....	.....
498. Westminster	56	58	8,320	8,898	276	.....	.....
499. Whitby E	6	195	2,898	5,604	.....	.....	.....
500. Whitby	2	59	2,832	4,713	.....	.....	.....
501. Whitchurch	48	15	2,567	7,545	.....	.....	182
502. Widdifield	40	37	.....	1,484	.....	.....	.....
503. Wilberforce and Algona N	9	10	913	3,127	56	.....	.....
504. Williams E	1	80	4,302	3,338	180	.....	.....
505. Williams W	....	163	3,203	3,441	91	.....	.....
506. Williamsburg	12	127	3,118	6,936	9,107	.....	.....
507. Willoughby	6	10	1,508	1,842	253	.....	.....
508. Wilmot	294	46	4,613	11,155	.....	.....	.....
509. Winchester	36	164	2,749	8,721	16,773	.....	40,680
510. Windham	22	53	3,900	7,415	360	.....	88
511. Wolfe Island	....	303	3,077	3,965	.....	.....	.....
512. Wolford	....	10	3,489	4,125	.....	.....	.....
513. Wollaston	380	7	135	1,547	.....	.....	.....
514. Woodhouse	19	53	2,740	4,010	.....	.....	.....
515. Woolwich	100	110	4,120	10,177	.....	.....	800
516. Yarmouth	704	63	8,127	9,149	626	.....	.....
517. Yonge and Escott Front	112	64	1,865	5,755	.....	.....	.....
518. Yonge and Escott Rear	....	75	900	3,741	.....	831	.....
519. York	640	588	7,183	44,979	.....	1,334	2,956
520. Zone	34	109	899	2,267	2,661	.....	.....
521. Zorra E	111	35	4,630	10,195	1.071	.....	200
522. Zorra W	228	320	4,371	5,705	2,947	.....	2,400

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets on December 31, 1905			
School debentures redeemed.	Drainage debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
153	.....	.....	1,000	82	....	1,507	35,971	4,503	1,287	.....	470
.....	.....	234	1,462	115	....	77	8,689	12	12	.....	471
.....	.....	.....	793	13	....	49	10.313	438	251	.....	472
141	.....	.....	.....	15	....	225	20,207	2,641	603	.....	473
200	.....	.....	4,800	163	....	492	25,391	13	1,068	.....	474
.....	573	.....	4,500	165	....	142	25,185	148	576	.....	475
.....	.....	.....	.....	.....	....	11	3,243	176	2,723	.....	476
.....	81	.....	1,300	64	....	25	11,085	1,622	724	.....	477
.....	.....	.....	.....	.....	....	21	16,305	2,877	253	.....	478
.....	.....	.....	500	6	....	85	21,465	4,682	25	.....	479
.....	.....	.....	4,360	1,229	....	245	17,384	2	2,166	13,005	480
.....	.....	.....	.....	.....	....	37	1,395	515	1,412	.....	481
.....	.....	.....	.....	.....	....	643	41,618	4,972	472	.....	482
.....	.....	573	.....	1,178	....	1,897	15,193	1,972	.....	887	483
100	197	.....	.....	133	....	35	13,498	3,737	2,177	.....	484
.....	1,586	.....	.....	344	....	91	20,607	140	2,856	.....	485
.....	.....	.....	890	910	....	36	23,037	2,027	3,809	9,322	486
300	.....	.....	500	105	....	1,424	24,082	2,071	40	.....	487
.....	.....	.....	1,500	67	....	284	12,477	1,321	1,877	.....	488
.....	.....	2,773	6,485	646	....	230	17,641	.....	675	.....	489
.....	1,605	.....	3,000	178	....	93	24,749	170	4,070	.....	490
144	558	568	.....	452	....	248	43,098	1,737	46	.....	491
.....	.....	.....	61	.....	....	.....	870	134	552	.....	492
175	.....	.....	200	57	....	29	3,079	680	1,846	.....	493
.....	.....	.....	1,000	24	....	64	9,350	3,405	209	.....	494
150	280	.....	3,950	160	....	127	15,727	623	363	.....	495
248	.....	.....	.....	234	55	*13,624	41,884	2,431	.....	.....	496
.....	222	.....	1,000	61	....	224	14,649	95	.....	.....	497
150	.....	.....	7,400	215	2	1,255	35,953	11,043	3,785	.....	498
113	.....	.....	4,054	133	....	41	17,397	293	58	.....	499
.....	.....	.....	6,000	.....	....	260	18,896	52	62	.....	500
.....	.....	.....	1,777	.....	....	235	16,192	1,836	5,186	.....	501
.....	.....	.....	1,400	23	....	159	5,054	.....	5,982	.....	502
.....	.....	.....	.....	.....	....	167	6,186	1,131	1,549	.....	503
.....	.....	.....	987	13	....	31	13,434	6,549	159	.....	504
.....	.....	.....	3,650	95	....	26	13,765	3,184	654	.....	505
.....	3,034	.....	.....	994	....	†7,200	36,299	1,043	30	.....	506
.....	329	500	.....	111	....	9	5,261	866	2,099	.....	507
528	.....	.....	4,000	201	....	292	31,943	1,362	.....	.....	508
263	4,407	1,200	.....	2,551	....	1,292	89,103	351	5,047	.....	509
.....	.....	.....	.....	.....	....	211	19,970	1,932	1,060	.....	510
.....	.....	700	.....	886	....	108	11,212	266	6,181	.....	511
.....	.....	.....	200	10	....	65	9,559	702	566	.....	512
.....	.....	.....	.....	.....	....	2	3,024	101	2,122	.....	513
.....	.....	.....	.....	5	....	92	10,358	2,737	.....	.....	514
128	.....	2,845	.....	1,956	....	142	36,951	1,936	5	.....	515
446	203	.....	25,229	939	....	150	60,867	.....	2,970	.....	516
.....	.....	.....	3,068	119	....	182	15,640	1,799	1,460	.....	517
.....	.....	15,000	.....	378	....	39	22,237	14	81	.....	518
5,577	.....	2,115	2,000	6,657	....	1,233	118,178	12,957	23,846	16,282	519
.....	2,740	152	4,500	692	....	620	17,521	2,141	4,156	.....	520
295	2,024	.....	9,851	611	24	70	44,055	1,081	497	.....	521
.....	1,936	.....	.....	560	....	179	27,975	13,478	804	.....	522

* Including $12,000 bonus to G. & G. Ry.
† Including $6,728 share of debt to other municipalities.

STATISTICS OF ONTARIO TOWNSHIP

RECEIPTS, DISBURSEMENTS,

Townships.	Assets on December 31, 1905.—*Continued.*			
	All other investments and deposits.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$
470. Toronto	28,611	2,175	1,053	37,629
471. Toronto Gore	3,517	1,018	.....	4,559
472. Tossorontio	.....	400	.....	1,089
473. Townsend	.....	4,000	283	7,527
474. Trafalgar	45,173	2,500	2,722	51,476
475. Tuckersmith	17,700	1,600	400	20,424
476. Tudor and Cashel	.....	.....	.....	2,899
477. Turnberry	.....	157	.....	2,503
478. Tyendinaga	.....	1,000	834	4,964
479. Usborne	.....	650	.....	5,357
480. Uxbridge	.....	1,300	48	16,521
481. Van Horne	.....	1,307	40	3,274
482. Vaughan	35,332	1,800	490	43,066
483. Verulam	.....	460	2,388	5,707
484. Vespra	.....	800	600	7,314
485. Wainfleet	26,000	2,525	8,415	39,936
486. Wallace	.....	400	332	15,890
487. Walpole	.....	600	1,945	4,656
488. Walsingham N	.....	1,330	110	4,638
489. Walsingham S	.....	1,750	.....	2,425
490. Warwick	.....	700	98	5,038
491. Waterloo	36,065	1,000	1,700	40,548
492. Waters	.....	.....	.....	686
493. Watt	.....	.....	875	3,401
494. Wawanosh E	.....	.....	.....	3,614
495. Wawanosh W	.....	1,000	1,150	3,136
496. Wellesley	12,276	.....	5,541	20,248
497. Westmeath	.....	995	448	1,538
498. Westminster	.....	300	.....	15,128
499. Whitby E	3,200	1,350	1,025	5,926
500. Whitby	.....	775	480	1,369
501. Whitchurch	14,279	275	550	22,126
502. Widdifield	.....	555	.....	6,537
503. Wilberforce and Algona N	.....	180	960	3,820
504. Williams E	.....	.....	29	6,737
505. Williams W	.....	125	249	4,212
506. Williamsburg	.....	1,400	4,270	6,743
507. Willoughby	.....	1,225	.....	4,190
508. Wilmot	.....	1,150	1,983	4,495
509. Winchester	40,680	1,475	2,159	49,712
510. Windham	88	4,600	490	8,170
511. Wolfe Island	.....	2,362	20,000	28,809
512. Wolford	.....	750	77	2,095
513. Wollaston	.....	1,000	10	3,233
514. Woodhouse	.....	.....	.....	2,737
515. Woolwich	8,300	.....	3,873	14,114
516. Yarmouth	.....	4,700	3,429	11,099
517. Yonge and Escott Front	.....	2,135	.....	5,394
518. Yonge and Escott Rear	.....	2,775	434	3,304
519. York	19,857	1,070	135,093	209,105
520. Zone	.....	650	490	7,437
521. Zorra E	200	1,450	5,862	9,090
522. Zorra W	9,450	450	415	24,597

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.										
County levy.	Local school rates.	Railway debentures.	School debentures.	Drainage debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	1,053	.....	.....	.....	.....	.....	1,053	470
.....	404	.....	.....	.....	1,616	.....	.....	.....	2,020	471
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	472
.....	.....	.....	283	.....	.....	.....	.....	.....	283	473
.....	.....	.....	1,200	.....	.....	.....	2,800	599	4,599	474
.....	.....	.....	1,000	1,998	1,500	.....	.....	112	4,610	475
192	1,554	.....	.....	.....	.....	.....	.....	20	1,766	476
2,112	.....	.....	.....	799	.....	.....	.....	.....	2,911	477
.....	18	.....	.....	.....	.....	.....	.....	502	520	478
.....	.....	.....	.....	.....	.....	.....	.....	145	145	479
.....	.....	19,000	.....	.....	.....	2,000	.....	.....	21,000	480
.....	.....	.....	.....	.....	.....	.....	.....	68	68	481
.....	39	.....	.....	.....	.....	.....	.....	459	498	482
.....	.....	12,648	2,388	.....	.....	.....	.....	4	15,040	483
2,945	.....	.....	600	2,220	.....	.....	.....	.....	5,765	484
.....	387	.....	1,450	5,762	.....	2,000	.....	229	9,828	485
4,148	.....	20,000	.....	.....	.....	.....	639	34	24,821	486
.....	.....	.....	900	.....	2,000	.....	.....	.....	2,900	487
1,300	239	.....	.....	.....	.....	.....	.....	.....	1,539	488
.....	637	5,958	.....	.....	.....	269	.....	.....	6,864	489
1,486	.....	.....	.....	5,490	.....	.....	.....	774	7,750	490
.....	.....	.....	1,415	2,795	5,454	.....	.....	.....	9,664	491
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	492
.....	784	.....	875	.....	.....	.....	.....	88	1,747	493
2,460	.....	.....	.....	.....	.....	.....	.....	200	2,660	494
2,713	9	.....	1,050	.....	.....	.....	.....	103	3,875	495
.....	.....	12,000	5,541	.....	.....	4,976	.....	.....	22,517	496
.....	.....	.....	.....	263	.....	.....	.....	.....	263	497
8,926	.....	.....	300	612	.....	.....	.....	.....	9,838	498
.....	26	.....	925	.....	.....	.....	.....	80	1,031	499
.....	24	.....	.....	.....	.....	.....	.....	162	186	500
3,639	.....	.....	.....	.....	.....	2,000	.....	311	5,950	501
.....	1,950	.....	.....	.....	.....	788	.....	42	2,780	502
1,190	.....	.....	960	.....	.....	.....	.....	106	2,256	503
4,616	.....	.....	.....	.....	.....	.....	.....	300	4,916	504
3,437	.....	.....	.....	.....	.....	.....	.....	103	3,540	505
.....	.....	.....	.....	25,840	.....	.....	.....	3,230	29,070	506
.....	968	.....	.....	1,207	1,000	.....	.....	78	3,253	507
.....	.....	.....	1,983	.....	.....	.....	.....	426	2,409	508
.....	.....	.....	2,159	57,698	.....	2,663	.....	20	62,540	509
.....	.....	.....	.....	.....	.....	.....	.....	64	64	510
3,077	.....	.....	.....	.....	19,300	1,386	.....	.....	23,763	511
.....	.....	.....	.....	.....	.....	.....	.....	135	135	512
132	1,300	.....	.....	.....	.....	.....	.....	218	1,650	513
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	514
.....	.....	7,725	3,872	.....	31,041	.....	.....	.....	42,638	515
7,314	226	.....	2,476	1,734	.....	1,814	.....	243	13,807	516
.....	.....	.....	.....	.....	.....	2,000	.....	80	2,080	517
.....	.....	.....	.....	.....	.....	1,144	.....	.....	1,144	518
10,389	12,633	.....	70,973	.....	32,214	32,146	6,619	3,800	168,774	519
899	1,696	.....	.....	6,667	671	4,500	.....	39	14,466	520
.....	.....	.....	2,958	8,273	.....	.....	.....	2,699	13,930	521
.....	.....	.....	.....	17,306	.....	2,470	2,400	.....	22,176	522

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.
	$	$	$	$	$	$	$
1. Acton, Halton	637	7,352	256	214	2,909	238	1,028
2. Ailsa Craig, Middlesex	205	3,840	200	46	.....	.....	.....
3. ALEXANDRIA, Glengarry	.....	14,450	718	211	3,253	.....	.....
4. ALLISTON, Simcoe	621	8,651	171	196	298	679	1,200
5. ALMONTE, Lanark	4,160	21,800	760	363	7,254	98	.....
6. Alvinston, Lambton	427	4,413	467	.....	.....	19	64
7. AMHERSTBURG, Essex	.....	17,493	575	521	3,526	.....	.....
8. Arkona, Lambton	1,030	1,666	278	55	.....	18	.....
9. ARNPRIOR, Renfrew	1,322	26,492	1,317	650	3,511	221	.....
10. Arthur, Wellington	701	7,312	420	245	.....	121	.....
11. Athens, Leeds	1,101	5,245	48	59	.....	5	2,769
12. AURORA, York	620	11,343	195	16	1,367	4	.....
13. AYLMER, Elgin	.....	24,933	508	260	8,510	193	.....
14. Ayr, Waterloo	.....	5,266	170	39	.....	211	.....
15. Bancroft, Hastings	.....	1,105	208	36	.....	.....	.....
16. BARRIE, Simcoe	5,922	46,805	2,167	1,268	24,320	967	4,810
17. Bath, Lennox and Addington	313	1,926	95	46	.....	60	.....
18. Bayfield, Huron	308	1,565	75	62	.....	75	.....
19. Beamsville, Lincoln	589	4,480	217	65	342	3	397
20. Beaverton, Ontario	1,126	2,958	167	9	.....	269	1,500
21. Beeton, Simcoe	348	5,084	175	112	2,609	.....	.....
22. Belle River, Essex	723	1,747	160	25	.....	.....	.....
23 BERLIN, Waterloo	.....	99,299	1,768	2,700	72,595	1,738	.....
24. BLENHEIM, Kent	789	12,187	542	737	3,459	.....	.....
25. Blyth, Huron	76	5,549	156	378	.....	84	3,501
26. Bobcaygeon, Victoria	4,154	4,646	52	121	.....	.....	3,000
27. Bolton, Peel	8	3,404	155	103	.....	.....	507
28. BOTHWELL, Kent	1,767	4,647	320	485	1,541	26	.....
29. BOWMANVILLE, Durham	307	27,957	405	2,349	748	13	.....
30. BRACEBRIDGE, Muskoka	422	19,375	621	352	14,967	50	.....
31. Bradford, Simcoe	2,109	5,189	108	315	.....	.....	.....
32. BRAMPTON, Peel	.....	28,902	1,106	150	3,749	15	.....
33. Bridgeburg, Welland	1,127	10,601	112	.....	3,810	21	4
34. Brighton, Northumberland	763	9,296	147	213	.....	.....	.....
35. BROCKVILLE, Leeds	1,678	106,688	5,918	4,661	67,346	6,332	33,045
36. BRUCE MINES, Algoma	511	3,258	159	17	.....	.....	.....
37. Brussels, Huron	2,399	9,034	288	498	.....	322	3,380
38. Burk's Falls, Parry Sound	288	6,021	135	34	651	844	5,468
39. Burlington, Halton	1,113	6,575	256	32	.....	80	.....
40. CACHE BAY, Nipissing	219	709	239	44	.....	.....	.....
41. Caledonia, Haldimand	1,067	5,091	394	15	.....	.....	.....
42. CAMPBELLFORD, Northumberland	245	15,768	654	371	6,459	33	2,698
43. Cannington, Ontario	.....	5,316	259	92	.....	.....	.....
44. Cardinal, Grenville	13	6,514	32	110	.....	.....	.....
45. CARLETON PLACE, Lanark	4,629	23,042	1,599	932	.....	64	.....
46. Casselman, Russell	220	1,671	56	.....	.....	15	.....
47. Cayuga, Haldimand	766	4,599	264	142	.....	24	2,002
48. Chatsworth, Grey	218	2,087	24	73	.....	1	.....
49. CHESLEY, Bruce	3,171	13,605	305	481	.....	166	3,167
50. Chesterville, Dundas	.....	4,807	510	80	.....	.....	.....

NOTE.—Towns are printed in small capitals.

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued*							Disbursements, 1905.						
Borrowed for current expenses.	Borrowed on debentures for schools.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government	Streets, bridges and parks.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
2,840	.....	6,000	.....	....	410	21,884	670	2,815	54	334	6,623	1
.....	.....	5,000	.....	....	31	9,322	237	402	5	251	759	2
10,000	.....	14,621	114	....	475	43,842	815	6,813	.....	291	4,073	3
3,657	.....	.....	.....	722	45	16,240	712	806	45	498	1,520	4
10,482	.....	.....	.....	....	7	44,924	645	4,935	400	1,202	8,356	5
5,923	.....	1,500	.....	....	172	12,985	425	922	25	283	1,561	6
73,500	.....	24,875	1,361	....	.....	121,851	2,928	5,344	325	898	5,578	7
.....	.....	.....	.....	....	296	3,343	152	.....	.....	97	322	8
58,000	.....	.....	.....	....	1,007	92,520	1,231	5,041	125	1,228	46,932	9
3,200	.....	3,032	.....	....	170	15,201	385	216	8	120	1,171	10
.....	3,000	.....	.....	....	.....	12,227	252	48	119	191	611	11
13,500	.....	4,485	359	....	32	31,921	643	1,585	1,013	341	1,940	12
20,493	.....	19,110	.....	....	107	74,114	972	10,363	161	996	4,468	13
256	.....	.....	.....	....	41	5,983	200	490	5	139	632	14
.....	.....	.....	.....	90	50	1,489	152	100	54	96	419	15
9,668	4,800	.....	67	600	100	101,494	1,725	19,871	124	2,432	5,293	16
150	.....	.....	.....	....	10	2,600	185	22	14	160	192	17
.....	.....	1,500	.....	....	1	3,586	104	.....	27	80	385	18
1,360	.....	2,000	.....	....	659	10,112	567	414	11	166	2,142	19
1,100	.....	10,000	.....	....	259	17,388	279	494	.....	274	387	20
3,842	.....	.....	.....	....	5	12,175	254	2,907	.....	216	892	21
150	.....	.....	.....	....	.....	2,805	130	.....	.....	98	406	22
20,032	2,000	159,171	5,409	100	*13,413	378,225	6,611	59,425	2,103	2,869	34,078	23
21,240	.....	.....	.....	....	240	39,194	813	5,569	89	792	683	24
1,550	.....	3,000	.....	....	540	14,834	557	633	24	95	339	25
.....	.....	.....	.....	....	10	11,983	333	320	9	213	470	26
2,132	.....	.....	.....	....	307	6,616	211	98	10	175	2,035	27
5,506	.....	2,680	60	....	354	17,386	231	2,064	.....	321	3,498	28
19,057	.....	.....	.....	....	675	51,511	1,037	4,108	40	767	2,580	29
12,100	.....	6,500	20	....	†7,302	61,709	1,157	4,437	821	957	16,552	30
.....	.....	.....	.....	92	65	7,878	796	283	25	171	1,470	31
4,822	.....	23,968	.....	....	551	63,263	1,483	3,159	277	736	9,430	32
41,732	.....	3,065	40	....	884	61,396	369	2,691	449	391	5,138	33
4,477	.....	.....	.....	....	110	15,006	691	740	13	355	3,616	34
195,923	.....	44,203	.....	....	1,358	467,152	4,641	58,322	799	3,551	10,686	35
400	.....	.....	.....	....	355	4,700	240	80	25	141	543	36
2,422	.....	.....	.....	....	507	18,850	545	599	1,667	89	102	37
5,100	.....	7,000	.....	....	35	25,576	244	1,385	343	266	472	38
4,137	.....	6,161	.....	....	124	18,478	830	859	83	292	6,915	39
1,305	.....	.....	.....	....	.....	2,516	132	.....	62	119	603	40
991	.....	.....	.....	....	126	7,684	326	15	.....	229	493	41
10,633	.....	.....	.....	....	441	37,302	906	5,395	138	418	4,851	42
4,123	.....	.....	.....	....	85	9,875	256	675	20	375	1,258	43
8,026	.....	.....	.....	....	570	15,265	346	727	206	90	1,120	44
16,692	.....	1,500	.....	....	2,268	50,726	1,244	3,263	.....	803	10,469	45
200	.....	.....	.....	....	.....	2,162	151	.....	19	80	622	46
3,885	.....	.....	.....	131	68	11,881	372	98	103	247	887	47
.....	.....	4,000	.....	....	43	6,446	127	.....	27	170	4,154	48
5,756	.....	3,151	.....	309	396	30,507	340	1,256	105	762	2,434	49
8,600	.....	.....	.....	....	34	14,031	134	84	11	197	7,390	50

*Including $6,917 for broken stone and cement sold to private parties, and $1,287 for land sales and rentals.

†Including $7,000 grant from Government for bridge.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities.	Disbursements, 1905.—*Continued.*							
	Waterworks and electric light construction.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Sinking Fund investments and deposits.
	$	$	$	$	$	$	$	$
1. Acton	.....	.....	15	56	51	336	2,950	789
2. Ailsa Craig	.....	4,726	132	20	52	294	1,016	.....
3. Alexandria	1,107	.....	.....	100	13	.....	3,433	.....
4. Alliston	.....	270	30	48	263	855	4,748	2,878
5. Almonte	.....	.....	1,243	18	600	2,107	7,343	728
6. Alvinston	.....	.....	10	120	15	386	1,860	.....
7. Amherstburg	11,711	.....	500	92	400	836	5,807	.....
8. Arkona	.....	.....	32	16	31	155	788	.....
9. Arnprior	4,672	270	54	53	927	1,553	8,017	1,082
10. Arthur	.....	50	34	15	431	1,090	2,545	.....
11. Athens	.....	3,000	.....	5	50	263	4,706	.....
12. Aurora	1,134	285	.....	22	6	827	3,250	.....
13. Aylmer	6,104	125	954	30	478	1,080	4,941	.....
14. Ayr	.....	.....	.....	5	35	416	1,800	548
15. Bancroft	.....	.....	.....	8	6	....	221	.....
16. Barrie	4,377	2,300	346	663	1,839	3,400	21,244	....
17. Bath	.....	.....	27	122	8	325	930	.....
18. Bayfield	.....	125	5	11	63	153	800	.....
19. Beamsville	1,473	.....	.....	30	15	410	2,569	.....
20. Beaverton	.....	300	114	109	25	413	1,113	414
21. Beeton	.....	.....	10	10	15	.....	1,313	.....
22. Belle River	.....	.....	3	81	6	117	722	.....
23. Berlin	124,484	277	1,209	1,176	2,011	4,662	30,105	.....
24. Blenheim	.....	.....	56	54	58	648	3,413	.....
25. Blyth	442	.....	.....	6	90	264	1,440	2,991
26. Bobcaygeon	.....	.....	20	46	202	646	2,200	289
27. Bolton	.....	235	31	.....	73	173	1,785	.....
28. Bothwell	760	.....	9	161	253	221	1,335	.....
29. Bowmanville	.....	153	.....	473	1,251	1,655	6,970	.....
30. Bracebridge	3,020	.....	79	307	913	.....	6,550	149
31. Bradford	.....	.....	20	28	50	520	2,600	.....
32. Brampton	831	.....	144	53	493	1,264	6,800	.....
33. Bridgeburg	705	515	.....	22	201	1,892	2,390	.....
34. Brighton	.....	.....	23	297	54	804	2,500	.....
35. Brockville	1,389	2,931	1,003	2,112	6,563	.....	25,115	13,869
36. Bruce Mines	.....	.....	13	.....	3	.....	1,695	.....
37. Brussels	.....	.....	10	5	120	299	2,048	5,066
38. Burk's Falls	2,645	150	14	7	48	.....	2,393	35
39. Burlington	.....	.....	12	282	21	392	2,478	.....
40. Cache Bay	.....	.....	270	.....	50	.....	71	.....
41. Caledonia	.....	.....	.....	7	64	356	2,450	.....
42. Campbellford	1,897	104	112	89	447	1,246	5,670	.....
43. Cannington	.....	506	12	22	45	551	1,500	.....
44. Cardinal	.....	130	.....	42	25	300	2,052	.....
45. Carleton Place	.....	.....	121	256	394	2,458	7,222	.....
46. Casselman	.....	.....	.....	14	10	138	750	83
47. Cayuga	.....	94	16	9	39	.....	2,063	.....
48. Chatsworth	.....	.....	8	.....	15	109	915	.....
49. Chesley	.....	.....	523	23	512	675	4,932	4,193
50. Chesterville	.....	.....	5	25	35	210	2,367	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets, on December 31, 1905.			
Other investments and deposits.	School debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	1,522	2,640	1,496	49	499	20,899	985	860	5,955	1
196	.....	349	.....	424	100	177	9,140	182	228	.....	2
.....	70	1,626	22,000	3,489	.....	7	43,837	5	3,268	.....	3
.....	514	885	.....	2,165	.....	3	16,240	.....	3,903	15,360	4
.....	.....	1,886	10,482	4,157	.....	290	44,392	532	250	3,396	5
.....	130	365	4,500	787	.....	1,596	12,985	.....	27	.....	6
.....	.....	4,213	72,182	6,601	.....	1,918	119,333	2,518	5,355	.....	7
.....	.....	188	.....	150	.....	127	2,058	1,285	.....	.....	8
.....	138	3,237	829	7,615	.....	934	83,938	8,582	14,973	8,041	9
.....	.....	1,012	6,094	1,154	155	240	14,720	481	813	.....	10
.....	.....	226	1,000	256	.....	212	10,939	1,288	792	.....	11
.....	1,144	890	17,000	1,425	.....	136	31,641	280	1,117	.....	12
.....	1,076	5,656	31,430	4,715	.....	565	74,114	.....	329	.....	13
.....	.....	591	88	751	.....	283	5,983	.....	386	7,521	14
.....	.....	.....	.....	6	.....	4	1,066	423	1,763	.....	15
2,435	403	13,231	8,864	11,333	.....	1,126	101,006	488	4,442	.....	16
.....	.....	.....	150	4	.....	14	2,153	447	448	.....	17
1,500	.....	119	.....	75	.....	45	3,492	94	12	.....	18
400	191	554	.....	888	61	176	10,067	45	145	.....	19
10,000	.....	1,500	1,100	366	.....	90	16,978	410	98	1,929	20
.....	.....	957	3,842	1,129	.....	135	11,680	495	16	.....	21
.....	.....	130	576	81	.....	99	2,449	356	138	.....	22
530	1,223	22,963	53,553	27,936	.....	2,982	378,197	28	2,454	.....	23
.....	167	2,112	22,290	2,015	.....	363	39,122	72	3,285	.....	24
3,000	.....	494	1,550	535	70	122	12,652	2,182	258	2,333	25
.....	.....	3,450	.....	327	.....	29	8,554	3,429	.....	.....	26
.....	.....	159	1,182	325	.....	96	6,588	28	.....	.....	27
.....	.....	724	4,506	645	.....	267	14,995	2,391	1,869	.....	28
.....	.....	4,180	21,925	5,176	.....	676	50,991	520	1,660	.....	29
1	161	4,745	13,728	4,959	.....	1,182	59,721	1,988	4,227	1,853	30
.....	155	.....	.....	86	.....	113	6,317	1,561	3,402	.....	31
23,530	.....	3,675	555	7,092	.....	2,265	62,087	1,176	236	.....	32
10	.....	1,504	40,032	2,013	.....	1,892	60,214	1,182	7,337	.....	33
.....	.....	464	4,477	255	.....	291	14,580	426	808	.....	34
29,926	.....	50,863	215,931	35,641	738	2,578	466,658	494	16,768	148,310	35
.....	.....	.....	400	8	.....	588	3,736	964	785	.....	36
.....	.....	1,389	2,422	2,514	.....	254	17,129	1,721	523	17,649	37
4,707	313	1,227	5,100	2,762	29	1,743	23,883	1,693	118	999	38
.....	.....	259	4,150	210	.....	163	16,946	1,532	493	.....	39
.....	159	.....	800	119	.....	84	2,469	47	2,200	.....	40
.....	.....	1,000	1,491	161	.....	77	6,699	985	508	.....	41
2,227	1,163	2,170	7,833	2,214	.....	400	37,280	22	978	.....	42
.....	.....	484	3,812	192	.....	167	9,875	.....	1,880	.....	43
.....	424	.....	8,826	392	.....	221	15,201	64	742	.....	44
.....	.....	4,400	13,600	3,449	100	379	48,158	2,568	51	.....	45
.....	.....	.....	.....	100	.....	163	2,130	32	607	600	46
.....	.....	612	5,785	830	.....	162	11,317	564	921	.....	47
.....	.....	.....	.....	26	245	30	5,826	620	9	.....	48
15	352	327	7,675	1,950	.....	999	27,073	3,434	689	3,276	49
.....	250	113	2,160	530	.....	195	13,706	325	.....	.....	50

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities.	Assets, on December 31, 1905.—*Continued.*				
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$	$
1. Acton	.....	9,200	18,900	4,772	40,672
2. Ailsa Craig	304	.....	5,481	250	6,445
3. Alexandria	.....	47,500	4,500	2,900	58,173
4. Alliston	.....	19,341	9,613	1,086	49,303
5. Almonte	.....	38,000	59,300	1,987	103,465
6. Alvinston	.....	1,300	4,877	941	7,145
7. Amherstburg	.....	43,500	15,200	33,439	100,012
8. Arkona	.....	.....	1,211	.....	2,496
9. Arnprior	30,000	102,910	34,623	5,028	204,157
10. Arthur	.....	.....	3,900	87	5,281
11. Athens	.....	.....	12,800	144	15,024
12. Aurora	200	16,800	9,000	163	27,560
13. Aylmer	.....	95,000	16,090	2,186	113,605
14. Ayr	.....	.....	5,137	.....	13,044
15. Bancroft	.....	.....	3,250	.....	5,436
16. Barrie	45,696	160,989	55,800	11,173	278,588
17. Bath	2,000	.....	1,700	.....	4,595
18. Bayfield	1,500	.....	650	.....	2,256
19. Beamsville	2,890	17,000	2,915	465	23,460
20. Beaverton	11,000	.....	975	7,791	22,203
21. Beeton	.....	36,000	6,200	700	43,411
22. Belle River	2,025	.....	800	7	3,326
23. Berlin	530	395,579	126,325	45,406	570,322
24. Blenheim	.....	10,000	20,800	4,045	38,202
25. Blyth	7,400	1,040	4,065	9,768	27,046
26. Bobcaygeon	.....	500	5,287	.....	9,216
27. Bolton	.....	.....	1,315	615	1,958
28. Bothwell	.....	6,200	9,127	895	20,482
29. Bowmanville	*11,604	.....	34,200	27,625	75,609
30. Bracebridge	16,530	85,000	18,450	5,414	133,462
31. Bradford	.....	.....	8,650	.....	13,613
32. Brampton	23,530	120,000	12,975	22,948	180,865
33. Bridgeburg	10	45,000	6,600	337	60,466
34. Brighton	.....	140	6,225	3,560	11,159
35. Brockville	58,507	379,827	102,897	152,151	858,954
36. Bruce Mines	.....	.....	900	463	3,112
37. Brussels	4,500	.....	6,750	.....	31,143
38. Burk's Falls	16,512	32,997	1,896	1,539	55,754
39. Burlington	2,000	1,300	6,850	8,757	20,932
40. Cache Bay	.....	.....	117	.....	2,364
41. Caledonia	.....	.....	6,200	.....	7,693
42. Campbellford	2,227	33,500	9,025	624	46,376
43. Cannington	.....	.....	9,100	135	11,115
44. Cardinal	.....	.....	3,400	447	4,653
45. Carleton Place	.....	.....	70,510	14,000	87,129
46. Casselman	.....	.....	500	.....	1,739
47. Cayuga	4,000	.....	8,400	.....	13,885
48. Chatsworth	.....	.....	1,162	100	1,891
49. Chesley	15	.....	9,425	20,176	37,015
50. Chesterville	.....	.....	1,650	100	2,075

*Omitting $1,270 for depreciation in value of foundry.

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.

County levy.	Local school rates.	Railway debentures.	School debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	5,500	.....	10,500	16,382	.....	.....	.....	32,382	1
.....	.....	.....	.....	.....	.....	9,308	.....	.....	.....	9,308	2
310	.....	.....	2,432	28,324	12,001	17,686	6,012	.....	600	67,365	3
.....	2,977	.....	.....	15,800	.....	32,279	3,657	.....	....	54,713	4
.....	.....	.....	.....	.....	34,658	56,662	.....	.....	550	91,870	5
....	...	.....	1,770	.....	.....	6,566	1,422	.....	15	9,773	6
500	1,464	9,867	.....	24,428	1,222	63,169	23,319	.....	350	124,319	7
.....	.....	.....	.....	.....	.....	3,567	.....	.....	.....	3,567	8
1,078	3,814	30,000	3,552	54,123	.....	43,793	73,171	.....	935	210,466	9
500	.....	.....	5,000	.....	.....	15,613	.....	.....	388	21,501	10
.....	.....	.....	3,000	.....	.....	10,006	.....	177	574	13,757	11
.....	1,400	.....	5,640	8,752	.....	13,059	2,000	.....	.....	30,851	12
.....	.....	.....	1,226	51,072	17,148	21,572	6,493	.....	2,193	99,704	13
.....	.....	.....	10,200	.....	.....	3,429	256	.....	.....	13,885	14
285	1,110	.....	.....	.....	.....	.....	.....	.....	3,216	4,611	15
4,219	7,660	.....	9,970	100,010	31,305	127,594	9,668	.....	2,850	293,276	16
.....	600	.....	.....	.....	.....	.....	.....	.....	50	650	17
.....	.....	.....	.....	.....	.....	1,381	.....	.....	.....	1,381	18
464	.....	.....	193	12,556	.....	2,844	1,561	.....	42	17,660	19
.....	322	.....	.....	.....	.....	12,000	.....	1,170	.....	13,492	20
795	632	.....	.....	11,020	2,638	7,998	100	.....	68	23,251	21
107	.....	.....	.....	.....	.....	1,251	152	.....	15	1,525	22
.....	.....	.....	56,109	103,010	235,816	337,126	40,504	.....	8,581	781,146	23
648	.....	2,322	3,973	.....	4,601	19,159	3,850	.....	771	35,324	24
.....	1,055	2,947	4,494	.....	.....	19,477	.....	.....	.....	27,973	25
.....	1,900	9,938	.....	.....	.....	.....	.....	.....	.....	11,838	26
.....	.....	.....	.....	.....	.....	4,690	1,050	.....	.....	5,740	27
.....	535	.....	.....	8,312	3,975	1,749	3,000	.....	191	17,762	28
.....	.....	.....	.....	.....	.....	106,082	2,532	.....	582	109,196	29
.....	.....	.....	3,886	29,474	38,740	27,034	5,725	100	5,869	110,828	30
520	2,100	.....	1,556	.....	.....	.....	.....	.....	400	4,576	31
.....	600	.....	.....	.....	.....	155,972	17,188	.....	1,114	174,874	32
.....	2,300	.....	.....	37,131	.....	2,815	5,000	.....	2,397	49,643	33
.....	1,000	.....	.....	.....	.....	3,259	.....	.....	66	4,325	34
.....	....	.....	40,000	222,760	136,402	418,235	34,757	.....	1,143	853,297	35
.....	1,375	.....	.....	.....	.....	.....	.....	.....	2,656	4,031	36
.....	.....	.....	7,500	.....	.....	47,374	.....	.....	.....	54,874	37
.....	2,295	.....	4,678	.....	.....	54,744	.....	.....	560	62,277	38
.....	.....	.....	.....	.....	.....	8,757	.....	.....	321	9,078	39
.....	1,537	.....	1,841	.....	.....	.....	505	.....	849	4,732	40
.....	.....	2,000	.....	.....	.....	.....	.....	.....	.....	2,000	41
.....	.....	.....	4,457	9,658	15,792	10,742	2,800	.....	1,235	44,684	42
.....	.....	.....	.....	.....	.....	511	2,195	.....	.....	2,706	43
300	.....	.....	1,857	....	.....	.....	1,000	.....	.....	3,157	44
.....	6,500	16,900	.....	.....	.....	*57,700	3,092	.....	605	83,897	45
.....	.....	.....	.....	.....	.....	2,000	828	.....	.....	2,828	46
275	1,300	.....	.....	.....	.....	16,800	1,100	.....	.....	19,475	47
.....	.....	.....	.....	.....	.....	4,000	.....	.....	16	4,016	48
.....	.....	.....	12,536	.....	.....	30,990	1,756	.....	.....	45,282	49
.....	144	.....	7,011	.....	.....	119	7,500	.....	.....	14,774	50

* Including $100 understated in 1904.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities and Counties in which located.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.
	$	$	$	$	$	$	$
51. Chippawa, Welland	959	2,393	266	231	.....	9	.....
52. Clifford, Wellington	901	1,786	50	45	.....	69	.....
53. Clinton, Huron	9,749	16,503	792	600	.....	932	.....
54. Cobden, Renfrew	.....	2,874	298	.....	.....	8	.....
55. Cobourg, Northumberland	2,511	39,483	2,027	4,516	.....	.....	.....
56. Colborne, Northumberland	191	6,298	75	51	.....	.....	.....
57. Collingwood, Simcoe	.....	59,409	1,569	2,346	*16,821	229	400
58. Copper Cliff, Nipissing	3,026	9,909	45	185	.....	.....	.....
59. Cornwall, Stormont	.....	48,450	2,694	1,202	10,232	259	4,482
60. Creemore, Simcoe	314	3,481	51	4	80	.....	.....
61. Delhi, Norfolk	987	3,661	108	15	.....	8	.....
62. Deseronto, Hastings	1,791	24,687	951	31	1,782	29	.....
63. Drayton, Wellington	.....	4.904	324	225	.....	.....	36
64. Dresden, Kent	2,907	13,138	457	293	2,944	153	.....
65. Dundalk, Grey	1,479	4,367	378	54	2,070	88	4,854
66. Dundas, Wentworth	94	28,712	595	838	1,644	508	5,373
67. Dunnville, Haldimand	.....	18,088	827	558	1,911	195	600
68. Durham, Grey	2,144	12,669	290	460	.....	225	10,000
69. Dutton, Elgin	30	4,270	164	70	.....	.....	.....
70. East Toronto, York	.....	28,688	137	.....	3,858	1,318	4,679
71. Eganville, Renfrew	1,495	6,652	424	130	.....	.....	.....
72. Elmira, Waterloo	681	6,306	193	29	.....	.....	500
73. Elora, Wellington	2,283	8,202	300	383	.....	25	500
74. Embro, Oxford	1,272	3,844	136	110	.....	.....	.....
75. Erin, Wellington	217	1,620	147	103	.....	.....	.....
76. Essex, Essex	138	8,577	895	103	2,135	94	1,400
77. Exeter, Huron	3,111	10,598	432	57	347	160	.....
78. Fenelon Falls, Victoria	863	9,261	132	1,416	777	2	7,003
79. Fergus, Wellington	4	11,893	610	420	.....	213	10,659
80. Forest, Lambton	1,487	10,968	253	285	.....	.....	850
81. Fort Erie, Welland	1,736	6,707	232	62	.....	.....	.....
82. Fort Frances, Rainy River	6	7,242	726	96	.....	147	990
83. Fort William, Thunder Bay	486	72,519	2,912	4,727	†57,770	4,331	9,554
84. Galt, Waterloo	1,539	75,614	2,259	2,978	15,917	7,177	4,957
85. Gananoque, Leeds	2,497	31,784	1,682	327	.....	1,936	.....
86. Garden Island, Frontenac	423	1,651	.....	.....	.....	.....	.....
87. Georgetown, Halton	.....	9,691	210	439	2,730	.....	500
88. Glencoe, Middlesex	95	6,371	475	164	.....	.....	.....
89. Goderich, Huron	1,633	35,079	860	49	‡13,195	4,156	3,897
90. Gore Bay, Manitoulin	1,447	4,079	206	24	.....	.....	100
91. Grand Valley, Dufferin	795	4,999	229	45	.....	11	28
92. Gravenhurst, Muskoka	530	12,898	223	363	8,084	23	.....
93. Grimsby, Lincoln	.....	7,355	97	12	.....	93	210
94. Hagersville, Haldimand	255	4,434	93	15	.....	.....	.....
95. Haileybury, Nipissing	.....	1,476	287	50	.....	.....	.....
96. Hanover, Grey	2,375	10,556	306	22	577	354	.....
97. Harriston, Wellington	4,364	14,172	617	239	.....	71	238
98. Hastings, Northumberland	470	4,476	283	117	.....	.....	.....
99. Havelock, Peterborough	335	4,954	299	179	.....	.....	.....
100 Hawkesbury, Prescott	671	20,008	1,613	228	4,217	.....	1,055

* Including $9,102 electric light and power rates.
† Including $39,258 electric light and power rates and telephone rents.
‡ Including $7,044 electric light and power rates.

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					No.
Borrowed for current expenses.	Borrowed on debentures for schools.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Streets, bridges and parks.	
$	$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	.....	3,858	178	12	.....	154	1,241	51
6,554	.....	6,554	.....	.....	419	16,378	181	44	425	72	1,073	52
.....	1,500	3,853	.....	.....	1,558	35,487	960	1,666	.....	872	4,684	53
290	.....	1,075	.....	.....	582	5,127	141	.....	17	81	393	54
28,534	.....	.....	.....	.....	100	77,171	3,284	5,184	95	1,790	5,311	55
2,000	.....	.....	.....	.....	69	8,684	253	665	10	153	2,156	56
17,201	.....	15,000	.....	.....	2,275	115,250	2,149	14,566	299	2,931	13,761	57
2,500	.....	.....	.....	.....	20	15,685	838	244	29	259	795	58
12,838	8,000	11,917	256	.....	817	101,147	1,957	8,829	481	2,285	3,848	59
.....	.....	22,000	375	.....	44	26,349	205	164	.....	118	124	60
.....	.....	.....	.....	.....	5	4,784	179	63	1	157	1,777	61
.....	.....	.....	.....	.....	152	29,423	790	3,872	100	347	2,470	62
5,218	3,800	776	.....	350	265	15,898	238	281	.....	.....	1,593	63
9,000	.....	8,555	.....	.....	462	37,909	567	3,798	131	478	4,939	64
12,900	.....	.....	.....	.....	591	26,781	477	2,844	.....	282	5,094	65
15,647	.....	7,659	.....	.....	352	61,422	1,395	7,138	245	973	2,835	66
2,870	500	.....	.....	.....	85	25,634	1,027	3,162	407	551	5,416	67
3,080	.....	13,840	60	.....	132	42,900	468	830	.....	497	2,954	68
4,500	1,200	.....	23	.....	154	10,411	225	323	120	147	4,570	69
14,056	15,000	68,371	367	.....	394	136,868	2,024	7,590	525	823	18,407	70
1,133	.....	.....	.....	.....	317	10,151	520	122	9	64	2,617	71
.....	3,000	5,000	118	.....	38	15,865	371	266	20	152	3,185	72
2,800	.....	2,500	25	150	317	17,485	409	690	24	302	2,923	73
.....	.....	.....	.....	1,000	229	6,591	169	150	.....	192	2,309	74
500	.....	.....	.....	.....	12	2,599	107	283	43	82	322	75
11,300	5,000	10,400	582	.....	162	40,786	993	4,233	43	703	2,191	76
3,400	.....	.....	.....	.....	784	18,889	668	1,491	.....	695	2,500	77
.....	.....	3,250	.....	.....	329	23,033	704	2,935	384	213	651	78
.....	.....	.....	.....	.....	4,270	28,069	560	1,206	2	388	1,481	79
4,800	.....	.....	.....	.....	217	18,860	224	912	12	508	755	80
.....	.....	.....	.....	.....	200	8,937	331	75	250	289	3,092	81
15,000	.....	20,000	283	.....	952	45,442	436	468	467	692	8,292	82
201,807	12,000	114,000	.....	.....	5,646	485,752	3,879	32,789	192	7,492	28,205	83
131,018	46,000	15,985	.....	.....	*8,931	312,375	3,988	22,048	914	2,958	15,813	84
307,691	.....	153,500	.....	.....	58	499,478	926	2,599	83	1,091	4,223	85
.....	.....	.....	.....	.....	.....	2,074	32	.....	.....	13	80	86
5,024	.....	.....	.....	.....	120	18,714	842	1,065	265	252	923	87
23,805	.....	5,045	78	69	73	36,175	281	740	9	191	686	88
58,500	.....	17,000	698	.....	766	135,833	1,710	9,557	415	1,525	2,410	89
2,586	.....	.....	.....	.....	.....	8,442	179	194	77	71	692	90
500	.....	3,950	31	.....	70	10,658	186	280	62	187	1,215	91
22,135	.....	29,000	.....	.....	36	73,292	1,111	8,567	1,007	534	1,951	92
4,506	1,000	57,200	251	.....	2,142	75,866	267	660	1,141	175	8,871	93
2,338	.....	.....	.....	.....	4	7,139	591	124	15	254	1,110	94
3,080	.....	.....	.....	.....	2	4,895	395	.....	112	268	1,705	95
14,993	6,000	15,500	364	.....	361	51,408	468	1,718	95	198	2,947	96
19,051	.....	16,884	.....	.....	849	56,485	698	1,438	67	470	10,379	97
1,900	.....	.....	.....	.....	40	7,286	168	481	10	321	1,966	98
3,100	.....	.....	.....	.....	94	8,961	211	743	112	99	1,057	99
7,500	.....	40,427	.....	.....	379	76,098	970	4,494	45	374	1,426	100

* Including $5,000 Contractors' guarantee bonds.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities.	Disbursements, 1905.—*Continued.*							
	Waterworks and electric light construction.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Sinking Fund investments and deposits.
	$		$	$	$	$	$	$
51. Chippawa	.....	.....	6	8	8	.....	1,000	.....
52. Clifford	.....	40	15	6	33	308	1,216	.....
53. Clinton	.....	.....	48	96	262	722	6,500	2,680
54. Cobden	.....	160	206	....	.....	228	1,159	.....
55. Cobourg	177	307	203	504	1,180	3,687	11,001	1,034
56. Colborne	.....	.....	30	142	38	550	2,416	.....
57. Collingwood	2,921	.....	1,072	713	1,169	4,084	17,048	605
58. Copper Cliff	....	.....	819	150	161	.....	3,981	.....
59. Cornwall	4,364	222	266	366	2,832	2,616	21,496	.....
60. Creemore	20,122	.....	7	.....	8	330	2,364	.....
61. Delhi	.....	.....	5	9	11	400	1,154	.....
62. Deseronto	1,151	.....	1,128	386	574	1,918	8,185	.....
63. Drayton	.....	278	17	20	218	380	5,367	.....
64. Dresden	169	.....	225	383	456	599	3,150	.....
65. Dundalk	.....	6,397	30	93	114	305	6,276	.....
66. Dundas	748	682	86	428	1,089	3,000	6,855	1,518
67. Dunnville	675	220	40	576	399	880	5,300	431
68. Durham	.....	.....	32	61	140	522	3,937	.....
69. Dutton	.....	.....	28	3	386	360	1,700	.....
70. East Toronto	47,821	.....	566	11	300	.....	20,472	270
71. Eganville	.....	.....	17	68	31	487	2,769	.....
72. Elmira	.....	.....	5	5	193	441	4,407	.....
73. Elora	.....	506	9	6	428	618	3,254	.....
74. Embro	.....	.....	10	.....	50	326	1,290	.....
75. Erin	.....	110	8	.....	33	260	600	.....
76. Essex	18	.....	25	136	158	503	7,943	.....
77. Exeter	.....	.....	36	177	37	640	3,127	678
78. Fenelon Falls	8,396	.....	38	26	380	928	2,591	.....
79. Fergus	.....	185	35	7	477	1,788	6,583	.....
80. Forest	.....	227	57	91	326	660	3,300	.....
81. Fort Erie	.....	528	.....	10	28	632	1,194	.....
82. Fort Frances	.....	19,598	.....	657	710	.....	2,641	.....
83. Fort William	74,272	58,167	2,374	160	3,703	.....	26,023	24,446
84. Galt	153,099	1,394	436	1,411	2,757	4,503	57,565	15,517
85. Gananoque	35,614	40	7	237	1,474	1,549	10,000	4,810
86. Garden Island	.....	.....	.....	.....	.....	325	757	.....
87. Georgetown	200	80	66	712	13	395	3,382	.....
88. Glencoe	.....	.....	86	7	7	889	2,168	.....
89. Goderich	4,740	.....	55	72	905	1,167	10,032	4,668
90. Gore Bay	.....	471	8	16	157	.....	4,073	176
91. Grand Valley	.....	.....	25	14	30	254	2,104	.....
92. Gravenhurst	1,401	1,755	125	331	470	.....	5,385	39
93. Grimsby	30,134	1,682	11	9	.....	952	6,228	.....
94. Hagersville	.....	.....	8	53	12	308	1,450	.....
95. Haileybury	.....	.....	15	.....	3	.....	.....	.....
96. Hanover	.....	.....	97	7	25	522	9,800	.....
97. Harriston	.....	.....	35	28	250	989	4,340	.....
98. Hastings	.....	.....	12	115	101	329	1,440	.....
99. Havelock	.....	.....	98	15	300	282	1,877	.....
100. Hawkesbury	36,000	395	76	.....	558	705	6,963	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets, on December 31, 1905.			
Other investments and deposits.	School debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	151	.....	173	.....	24	2,955	903	129	.....	51
.....	.....	209	11,384	409	.....	163	15,578	800	1,148	.....	52
.....	.....	977	.....	3,160	.....	1,013	23,640	11,847	401	21,655	53
.....	93	244	1,775	501	.....	129	5,127	.....	631	.....	54
.....	.....	5,750	25,800	10,321	.....	764	76,392	779	14,353	2,481	55
.....	.....	.....	2,000	41	.....	166	8,620	64	.....	.....	56
.....	645	15,208	14,483	20,084	429	3,083	115,250	.....	851	7,228	57
.....	.....	599	2,503	160	.....	560	11,095	4,590	1,684	.....	58
15,956	.....	12,325	11,207	11,159	96	842	101,147	.....	46,780	.....	59
.....	.....	303	.....	681	.....	30	24,456	1,893	2,132	.....	60
.....	..	.....	.....	3	.....	431	4,190	594	490	.....	61
.....	755	1,542	.....	2,532	.....	862	26,612	2,811	41	.....	62
10	.....	706	5,295	750	19	577	15,749	149	12	.....	63
.....	.....	2,241	13,762	1,615	43	185	32,741	5,168	3,756	.....	64
.....	.....	204	4,000	203	.....	364	26,683	98	62	.....	65
.....	600	3,240	23,186	4,518	191	1,244	59,971	1,451	11,903	29,118	66
135	223	1,904	1,803	2,243	.....	242	25,634	.....	60	2,407	67
20,000	.....	2,050	6,091	2,379	.....	295	40,256	2,644	2,561	.....	68
.....	215	456	500	394	.....	224	9,651	760	2,701	.....	69
2,536	168	3,011	22,750	7,141	.....	2,453	136,868	.....	4,871	20,635	70
.....	.....	109	2,230	212	.....	122	9,377	774	2,213	.....	71
.....	.....	1,527	.....	1,016	3	3,361	14,952	913	.....	.....	72
.....	.....	2,244	2,800	624	.....	370	15,207	2,278	5,381	.....	73
.....	.....	490	.....	220	.....	90	5,298	1,295	34	.....	74
.....	.....	.....	500	14	.....	71	2,433	166	55	.....	75
.....	553	2,148	11,273	2,957	.....	*6,541	40,418	368	13,240	.....	76
50	.....	1,337	3,400	986	.....	1,067	16,889	2,000	106	4,468	77
1,382	.....	500	1,165	653	.....	597	21,543	1,490	1,839	.....	78
11,423	383	1,408	.....	532	150	568	27,176	893	705	.....	79
850	1,053	1,172	5,975	886	.....	818	17,826	1,034	1,177	.....	80
.....	.....	543	.....	388	.....	107	7,467	1,470	982	.....	81
.....	.....	.....	9,000	281	.....	1,644	44,886	556	.....	.....	82
24,978	383	9,967	146,877	32,853	2,307	5,804	484,871	881	21,437	113,643	83
1,363	.....	1,330	724	21,769	258	4,528	312,375	.....	5,182	100,519	84
.....	.....	378	401,494	9,531	3,450	568	478,074	21,404	1,154	32,103	85
.....	.....	.....	.....	.....	.....	250	1,457	617	.....	.....	86
.....	1,000	1,257	4,617	3,224	.....	421	18,714	.....	1,206	.....	87
2,000	794	484	26,453	779	.....	508	36,082	93	1,203	.....	88
.....	.....	7,459	75,500	12,321	.....	1,373	133,909	1,924	4,545	48,446	89
.....	.....	.....	2,000	152	.....	175	8,441	1	456	1,944	90
45	.....	201	4,000	288	.....	591	9,482	1,176	5	.....	91
567	1,043	8,691	23,850	3,463	460	†11,110	71,860	1,432	3,494	198	92
16,456	419	1,334	2,232	3,232	1,602	461	75,866	.....	2,097	.....	93
.....	359	.....	2,138	163	.....	140	6,725	414	239	.....	94
.....	.....	.....	1,841	60	.....	19	4,418	477	1,529	.....	95
.....	.....	1,343	28,384	2,654	.....	70	48,328	3,080	1,276	.....	96
.....	74	2,056	28,349	3,065	.....	662	52,900	3,585	1,110	.....	97
.....	.....	.....	1,900	106	.....	45	6,994	292	.....	.....	98
.....	.....	135	3,000	245	.....	427	8,601	360	213	.....	99
926	.....	2,507	12,937	4,086	2,068	75	74,605	1,493	5,557	.....	100

*Including $5,000 bonus to canning factory.
† Including $10,000 bonus to chair factory.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS.

Village and Town Municipalities.	Assets, on December 31, 1905.—*Continued.*				
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$	$
51. Chippawa	500	50	3,900	6,670	12,152
52. Clifford	.....	.....	950	.....	2,898
53. Clinton	25,000	.....	22,500	23,171	104,574
54. Cobden	.....	.....	1,960	5,434	8,025
55. Cobourg	.....	.....	158,000	24,048	199,661
56. Colborne	.....	.....	3,890	500	4,454
57. Collingwood	31,800	145,402	151,700	5,501	342,482
58. Copper Cliff	.....	.....	4,750	.....	11,024
59. Cornwall	17,956	139,747	42,350	4,457	251,290
60. Creemore	.....	22,000	190	.....	26,215
61. Delhi	.....	.....	100	.....	1,184
62. Deseronto	.....	34,068	8,578	745	46,243
63. Drayton	10	.....	15,400	16	15,587
64. Dresden	.....	10,000	29,265	9,537	57,726
65. Dundalk	.....	6,500	7,950	11,827	26,437
66. Dundas	18,408	48,833	70,764	8,676	189,153
67. Dunnville	6,511	17,000	13,330	15,390	54,698
68. Durham	27,000	.....	8,600	1,600	42,405
69. Dutton	.....	.....	6,800	.....	10,261
70. East Toronto	22,386	107,358	12,470	26,681	194,401
71. Eganville	.....	.....	5,384	107	8,478
72. Elmira	9,000	.....	800	.....	10,713
73. Elora	3,000	.....	10,300	121	21,080
74. Embro	.....	.....	7,000	.....	8,329
75. Erin	.....	.....	2,000	.....	2,221
76. Essex	.....	33,000	5,700	12,248	64,556
77. Exeter	50	2,800	14,500	250	24,174
78. Fenelon Falls	16,382	66,379	8,677	4,699	99,466
79. Fergus	11,423	.....	19,089	237	32,347
80. Forest	.....	.....	18,800	192	21,203
81. Fort Erie	.....	.....	9,930	.....	12,382
82. Fort Frances	.....	350	25,750	110	26,766
83. Fort William	24,978	226,500	148,314	181,634	717,387
84. Galt, Waterloo	1,363	172,940	118,677	138,530	537,211
85. Gananoque	.....	125,000	25,500	.....	205,161
86. Garden Island	.....	.....	.....	.....	617
87. Georgetown	8,500	40,000	11,600	.....	61,306
88. Glencoe	3,000	.....	7,625	.....	11,921
89. Goderich	41,000	111,616	20,350	27,821	255,702
90. Gore Bay	550	300	3,372	.....	6,623
91. Grand Valley	45	.....	2,943	.....	4,169
92. Gravenhurst	567	26,401	27,500	1,552	61,144
93. Grimsby	16,246	44,000	7,400	3,440	73,183
94. Hagersville	.....	684	1,250	50	2,637
95. Haileybury	.....	.....	.....	.....	2,006
96. Hanover	.....	26,000	.....	207	30,563
97. Harriston	10,000	.....	15,250	19,529	49,474
98. Hastings	.....	.....	7,800	.....	8,092
99. Havelock	.....	.....	4,750	215	5,538
100. Hawkesbury	926	100,000	700	.....	108,676

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.

County levy.	Local school rates.	Railway debentures.	School debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	$	
226	30	.....	.....	.....	.....	3,430	500	.....	150	4,336	51
.....	.....	.....	.....	.....	.....	6,345	.....	.....	.....	6,345	52
1,029	.....	.....	3,500	.....	.....	80,022	.....	.....	562	85,113	53
452	.....	.....	4,818	.....	.....	6,282	291	.....	93	11,936	54
737	.....	.....	24,280	.....	.....	210,300	11,300	2,481	1,096	250,194	55
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	56
.....	.....	.....	8,374	95,115	.....	†299,879	17,201	.....	2,528	423,097	57
.....	2,838	.....	.....	.....	.....	1,984	.....	.....	3,015	7,837	58
2,577	15,068	.....	8,000	121,910	.....	156,719	12,838	.....	776	317,888	59
371	80	.....	.....	21,697	.....	.....	.....	.....	.....	22,148	60
.....	1,255	.....	.....	.....	.....	.....	.....	.....	1,050	2,305	61
....	2,800	21,477	3,414	30,428	.....	.....	.....	.....	.....	58,119	62
.....	691	.....	3,800	.....	.....	13,004	392	.....	550	18,437	63
.....	5,721	372	.....	.....	9,243	25,096	.....	.....	12	40,444	64
.....	.....	.....	.....	.....	3,887	11,597	12,017	.....	464	27,965	65
.....	.....	.....	.....	38,055	.....	62,056	.....	.....	367	100,478	66
.....	3,150	.....	12,277	6,056	.....	23,948	2,870	.....	2,009	50,310	67
.....	.....	.....	.....	.....	.....	59,451	.....	.....	112	59,563	68
.....	.....	2,140	2,462	.....	.....	3,259	4,000	.....	1,858	13,719	69
1,168	3,364	.....	21,347	83,086	6,192	75,458	14,056	.....	2,848	207,519	70
641	1,461	.....	.....	.....	.....	2,685	.....	.....	.....	4,787	71
.....	.....	6,702	3,000	.....	.....	17,840	.....	.....	.....	27,542	72
615	2,367	.....	.....	.....	.....	12,707	.....	.....	240	15,929	73
.....	1,225	.....	.....	.....	.....	4,191	.....	.....	2,530	7,946	74
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75
503	2,000	.....	6,857	22,239	.....	30,650	11,300	.....	2,020	75,569	76
.....	2,510	5,221	.....	.....	.....	11,983	.....	.....	.....	19,714	77
.....	1,952	.....	.....	68,250	.....	14,022	.....	.....	500	84,724	78
.....	126	6,705	2,965	.....	.....	1,904	.....	.....	463	12,163	79
.....	.....	.....	3,119	.....	.....	14,576	1,000	.....	.....	18,695	80
.....	1,100	.....	.....	.....	.....	4,643	1,890	.....	15	7,648	81
.....	2,370	.....	.....	.....	.....	20,000	6,000	.....	2,840	31,210	82
.....	2,976	15,000	51,617	93,117	96,914	286,918	201,807	2,188	3,114	753,651	83
.....	.....	.....	61,700	172,940	.....	232,142	131,018	.....	*13,840	611,640	84
.....	.....	14,700	26,536	176,000	.....	8,573	.....	.....	.....	225,809	85
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	86
.....	.....	.....	4,800	37,800	.....	14,379	5,024	.....	.....	62,003	87
594	.....	.....	1,965	.....	.....	11,001	1,016	.....	.....	14,576	88
1,663	.....	19,643	5,000	68,148	26,875	‡198,780	.....	.....	872	320,981	89
.....	.....	.....	1,850	.....	.....	.....	410	176	28	2,464	90
.....	.....	.....	.....	.....	.....	8,894	.....	.....	1,871	10,765	91
.....	484	.....	5,288	.....	28,909	43,420	1,500	52	193	79,846	92
522	.....	.....	17,681	33,422	.....	26,492	4,506	.....	10,303	92,926	93
.....	.....	.....	2,085	.....	.....	578	910	.....	47	3,620	94
.....	500	.....	.....	.....	.....	.....	1,803	.....	1,293	3,596	95
.....	.....	.....	6,000	23,106	.....	24,006	.....	.....	200	53,312	96
984	.....	.....	4,426	.....	.....	54,832	4,150	.....	.....	64,392	97
.....	.....	.....	.....	.....	.....	.....	1,000	.....	.....	1,000	98
.....	.....	.....	.....	.....	.....	2,780	500	.....	825	4,105	99
756	.....	6,287	.....	28,781	.....	33,913	101,633	.....	.....	171,370	100

* Including $5,145 on Contractors' Bonds, and $8,094 to Collegiate Institute Building Fund.
† Including $1,186 formerly understated. ‡ Including $1,040 formerly understated.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Municipalities.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.
	$	$	$	$	$	$	$
101. Hensall, Huron	26	3,244	171	.....	.....	.....	517
102. Hespeler, Waterloo	.....	16,125	521	425	2,953	...	.....
103. Hintonburg, Carleton	260	19,145	78	79	4,054	85	753
104. Holland Landing, York	134	980	20	47	.....	.....	.....
105. Huntsville, Muskoka	2,046	14,802	916	350	10,509	....	.....
106. Ingersoll, Oxford	.....	42,151	1,597	932	.....	1,685	950
107. Iroquois, Dundas	.....	9,766	140	164	2,815	.....	.....
108. Kemptville, Grenville	286	7,793	440	50	.....	.....	250
109. Kenora, Rainy River	180	47,289	2,124	998	*41,282	180	.....
110. Kincardine, Bruce	3,040	16,001	771	334	5,501	648	8,378
111. Kingsville, Essex	766	12,170	368	159	2,220	10	.....
112. Lakefield, Peterborough	113	6,869	349	178	.....	285	405
113. Lanark, Lanark	442	4,935	226	122	.....	104	.....
114. Lancaster, Glengarry	529	1,408	238	11	.....	.....	.....
115. Leamington, Essex	3,614	31,584	1,011	156	†18,850	.....	.....
116. Lindsay, Victoria	611	69,021	1,927	1,945	12,954	3,465	2,631
117. Listowel, Perth	4,151	23,162	815	215	1,306	557	381
118. Little Current, Manitoulin	1,413	3,348	409	22	.....	.....	.....
119. L'Orignal, Prescott	147	2,489	128	.....	.....	.....	.....
120. Lucan, Middlesex	311	5,054	231	135	.....	87	.....
121. Lucknow, Bruce	403	6,712	370	127	.....	258	9,495
122. Madoc, Hastings	4,728	5,520	553	47	2,245	.....	.....
123. Markdale, Grey	1,439	4,621	471	98	.....	.....	.....
124. Markham, York	2,011	7,023	83	149	1,572	6	250
125. Marmora, Hastings	1,516	3,301	197	20	.....	6	.....
126. Massey, Algoma	887	2,163	147	30	.....	.....	.....
127. Mattawa, Nipissing	428	8,391	1,480	138	.....	.....	.... .
128. Maxville, Glengarry	.....	2,325	275	5	.....	4	.....
129. Meaford, Grey	1,145	18,424	203	877	2,258	525	1,436
130. Merrickville, Grenville	815	6,676	168	74	.....	.....	4
131. Merriton, Lincoln	1,734	15,936	312	130	3,911	215	1,254
132. Midland, Simcoe	66	28,809	1,607	357	‡15,719	1,006	.....
133. Millbrook, Durham	80	4,561	918	68	.....	.....	.....
134. Milton, Halton	.....	8,497	252	264	1,032	202	500
135. Milverton, Perth	284	4,303	217	38	.....	.....	.....
136. Mitchell, Perth	777	17,197	628	359	4,006	.....	177
137. Morrisburg, Dundas	1,842	13,825	365	26	4,914	.....	.....
138. Mount Forest, Wellington	863	19,124	838	348	6,392	805	4,300
139. Napanee, Lennox and Addington	78	30,038	2,237	795	25	.....	.....
140. Newboro, Leeds	441	1,851	106	45	.....	.....	4,001
141. Newburgh, Lennox and Addington	189	3,157	24	.....	.... ..	.....	....
142. Newbury, Middlesex	283	1,434	96	35	.....	3	.....
143. Newcastle, Durham	18	3,621	70	58	.....	.....	.....
144. New Hamburg, Waterloo	3,562	8,610	297	70	.....	.....	.....
145 New Liskeard, Nipissing	.....	8,190	1,069	290	.....	1	.....
146. Newmarket, York	807	12,768	394	252	6,446	39	1,660
147. Niagara, Lincoln	2	11,786	201	660	3,667	10	.....
148. North Bay, Nipissing	17,733	31,988	2,032	1,005	12,436	441	.....
149. North Toronto, York	922	24,181	34	170	3,199	822	.....
150. Norwich, Oxford	2,743	10,833	276	127	.....	536	1,050

* Including $28,580 rates and rents for electric light and power and telephone services.
† Including $16,322 from natural gas rates.
‡ Including $9,852 from electric light rates.

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed for current expenses.	Borrowed on debentures for schools.	Borrowed on debentures for other purposes.	Premium on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Streets, bridges and parks.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
4,681	.....	.....	.....	....	126	8,765	171	321	.....	100	4,296	101
4,975	.....	20,000	.....	....	289	45,288	692	3,704	20	522	6,126	102
1,264	.....	.....	.....	....	226	25,944	1,345	4,028	172	357	2,387	103
400	.....	.....	.....	....	25	1,606	100	.....	.....	74	270	104
9,825	2,500	.....	44	....	43	41,035	1,185	8,268	115	813	1,993	105
30,427	.....	.....	.....	100	241	78,083	2,327	6,469	129	1,526	1,716	106
14,494	.....	20,702	298	....	94	48,473	185	1,764	144	533	1,096	107
2,500	.....	.....	.....	....	386	11,705	526	898	55	260	1,451	108
205,061	.....	11,597	.....	....	1,599	310,310	2,325	25,515	600	2,289	14,877	109
3,500	.....	4,500	.....	186	*3,104	45,963	691	5,573	106	1,059	2,222	110
6,500	.....	689	.....	....	687	23,569	640	2,586	.....	433	1,320	111
8,276	.....	2,048	.....	....	172	18,695	384	490	11	308	3,421	112
800	.....	2,158	35	....	10	8,832	538	339	1	149	2,756	113
200	.....	.....	.....	....	55	2,441	121	63	14	79	365	114
20,039	.....	.....	.....	....	256	75,510	1,146	4,429	54	563	1,350	115
24,916	.....	55,440	554	212	1,182	174,858	3,040	16,298	143	1,920	6,523	116
5,727	.....	.....	.....	....	63	36,377	532	5,074	177	869	3,873	117
.....	.....	.....	.....	....	.....	5,192	440	492	.....	189	428	118
.....	.....	.....	.....	....	.....	2,764	224	36	60	48	819	119
1,200	.....	.....	.....	....	1	7,019	156	240	16	81	481	120
.....	.....	3,734	51	....	200	21,350	352	1,797	.....	269	3,890	121
2,320	.....	.....	.....	....	1,676	17,089	353	3,573	.....	235	1,203	122
1,000	.....	2,405	66	....	1,823	11,923	338	301	35	138	812	123
.....	.....	.....	.....	....	145	11,239	216	3,054	.....	292	1,222	124
.....	.....	.....	.....	....	419	5,459	225	189	15	94	516	125
.....	.....	.....	.....	....	75	3,302	187	.....	18	77	537	126
.....	.....	.....	.....	....	67	10,504	372	652	35	90	650	127
.....	5,000	.....	14	....	431	8,054	189	199	80	126	55	128
67,642	.....	41,475	969	....	406	135,360	2,369	2,954	1,151	892	9,085	129
3,100	.....	.....	.....	....	34	10,871	228	1,898	7	185	1,059	130
.....	.....	.....	.....	....	51	23,543	1,255	2,938	3	218	1,689	131
42,755	10,000	12,000	1,401	812	427	114,959	1,165	12,349	675	973	3,729	132
1,500	.....	.....	.....	....	117	7,244	184	510	31	348	1,552	133
.....	.....	8,000	.....	....	1,200	19,947	609	1,418	5	485	1,344	134
2,500	.....	.....	.....	19	5	7,366	444	98	8	170	1,157	135
17,831	.....	8,500	58	84	110	49,727	715	4,864	270	340	3,633	136
10,571	.....	.....	.....	....	5	31,548	798	3,453	522	464	11,562	137
60,500	.....	2,315	.....	....	670	96,155	971	8,988	17	701	3,041	138
3,246	.....	.....	.....	....	826	37,245	1,941	2,921	503	485	3,557	139
.....	.....	600	14	....	20	7,078	89	.....	30	37	216	140
.....	.....	.....	.....	....	.....	3,370	200	.....	.....	116	681	141
400	.....	463	.....	....	29	2,743	87	2	11	62	526	142
300	.....	.....	.....	....	.....	4,067	260	132	6	212	392	143
.....	1,000	5,000	20	60	.....	18,619	368	1,079	119	182	4,460	144
15,084	10,000	8,000	525	....	.....	43,159	649	741	.....	710	3,008	145
7,000	.....	19,987	167	....	426	49,946	849	5,941	.....	770	4,819	146
10,425	.....	.....	.....	....	93	26,844	793	3,698	8	707	1,808	147
35,000	15,000	34,000	2,139	....	18	151,792	1,353	11,704	310	1,461	5,893	148
17,391	.....	.....	.....	....	105	46,824	1,596	6,109	40	994	4,669	149
7,350	.....	2,860	.....	....	113	25,888	470	1,420	12	246	5,944	150

*Including $863 contractors' guarantee deposits and $1,523 miscellaneous receipts from waterworks and electric light accounts.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS

Municipalities.	Disbursements, 1905.—*Continued.*							
	Waterworks and electric light construction.	Buildings and other works.	Board of Health.	Support of the Poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Sinking Fund investments and deposits.
	$	$	$	$	$	$	$	$
101. Hensall	.....	.....	12	5	20	285	1,326	.....
102. Hespeler	650	.....	142	106	375	961	4,075	.....
103. Hintonburg	737	375	204	3	216	673	4,533	243
104. Holland Landing	.....	.....	.....	5	3	96	416	.....
105. Huntsville	1,165	.....	80	27	577	.....	12,500	.....
106. Ingersoll	.....	1,903	64	586	1,469	5,017	12,280	8,734
107. Iroquois	77	.....	.....	77	20	1,096	3,299	.....
108. Kemptville	.....	.....	15	122	5	488	3,868	.....
109. Kenora	795	.....	284	1,116	1,624	.....	14,524	3,813
110. Kincardine	4,889	.....	114	126	607	735	4,700	2,824
111. Kingsville	1,290	.....	34	147	451	461	2,730	.....
112. Lakefield	.....	.....	20	21	225	655	1,904	1,350
113. Lanark	.....	.....	6	15	67	462	1,901	.....
114. Lancaster	.....	.....	2	12	206	165	1,086	.....
115. Leamington	8,637	75	248	313	295	786	6,718	.....
116. Lindsay	3,694	73	1,375	1,986	1,979	3,220	16,363	2,254
117. Listowel	5,298	.....	25	21	348	1,050	6,309	2,615
118. Little Current	.....	.....	60	25	206	.....	1,480	.....
119. L'Orignal	.....	.....	.....	.....	.....	215	1,073	.....
120. Lucan	.....	.....	.....	9	105	210	2,322	87
121. Lucknow	.....	.....	4	20	107	152	2,269	5,845
122. Madoc	444	.....	25	227	120	759	2,758	.....
123. Markdale	.....	1,600	121	67	105	290	1,393	.....
124. Markham	.....	412	42	20	54	341	1,855	.....
125. Marmora	.....	.....	18	9	86	407	1,600	.....
126. Massey	.....	.....	26	.....	42	.....	1,161	.....
127. Mattawa	.....	.....	60	34	448	.....	3,864	.....
128. Maxville	.....	.....	.....	25	15	360	3,693	.....
129. Meaford	2,620	4,302	.....	69	635	835	5,599	.....
130. Merrickville	.....	.....	23	.....	8	375	2,036	.....
131. Merritton	4,064	.....	42	87	112	1,402	4,698	.....
132. Midland	56,049	550	50	36	926	1,724	11,264	.....
133. Millbrook	.....	.....	77	.....	19	351	1,336	84
134. Milton	4,845	280	20	50	82	439	1,799	.....
135. Milverton	.....	.....	5	10	48	233	1,262	.....
136. Mitchell	10,347	.....	39	163	182	875	4,271	1,200
137. Morrisburg	.....	.....	.....	215	49	830	6,732	.....
138. Mount Forest	.....	.....	7	15	58	1,416	4,887	4,443
139. Napanee	7,853	507	200	785	765	2,400	7,700	.....
140. Newboro	.....	400	.....	.....	20	141	990	212
141. Newburgh	.....	45	.....	127	.....	.....	1,815	.....
142. Newbury	.....	.....	.....	5	9	332	576	.....
143. Newcastle	.....	.....	33	.....	60	342	2,000	.....
144. New Hamburg	.....	410	45	53	45	520	7,750	.....
145. New Liskeard	.....	6,154	769	87	532	.....	11,500	...
146. Newmarket	3,643	.....	49	38	163	1,600	6,797	.....
147. Niagara	.....	712	25	150	503	802	2,748	.....
148. North Bay	70,568	4,816	181	538	755	.....	28,301	.....
149. North Toronto	14,350	243	55	110	501	800	5,705	2,036
150. Norwich	.....	106	7	10	401	527	2,081	2,526

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets, on December 31, 1905.			
Other investments and deposits.	School debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$		$	$	$		$	
177	.....	709	500	522	.....	229	8,673	92	207	.....	101
20,000	675	1,147	3,940	1,653	.....	500	45,288	.....	1,556	.....	102
317	158	2,641	1,839	5,119	.....	413	25,760	184	15,750	2,556	103
.....	.....	.....	400	10	.....	16	1,390	216	252	.....	104
.....	601	1,352	7,500	3,325	.....	1,078	40,579	456	3,420	.....	105
20,000	.....	704	6,182	7,237	....	1,740	78,083	.....	9,345	76,960	106
.....	541	2,941	32,054	4,418	.....	228	48,473	.....	807	.....	107
363	.....	435	2,500	345	.....	291	11,622	83	3,998	.....	108
.....	1,915	7,561	205,002	18,670	.....	1,744	302,654	7,656	19,413	11,983	109
1,717	.....	8,513	3,500	3,402	207	1,535	42,520	3,443	4,064	14,556	110
.....	875	2,987	6,500	2,583	.....	395	23,432	137	902	.....	111
.....	243	65	7,850	1,200	.....	104	18,251	444	9	8,918	112
.....	346	350	800	347	.....	143	8,220	612	.....	.....	113
.....	.....	.....	200	3	.....	84	2,400	41	408	.....	114
.....	1,148	4,628	37,989	4,774	.....	475	73,628	1,882	8,156	.....	115
62	215	14,423	74,914	22,335	.....	*3,334	174,151	707	20,753	26,592	116
.....	.....	2,530	.....	6,844	.....	812	36,377	.....	1,903	†16,089	117
.....	77	303	.....	147	.....	133	3,980	1,212	278	.....	118
.....	.....	.....	.....	13	.....	52	2,540	224	1,571	.....	119
.....	.....	303	1,380	782	.....	53	6,225	794	93	6,147	120
.....	.....	4,895	.....	1,390	.....	151	21,141	209	3,182	12,941	121
5,000	529	874	.....	931	.....	58	17,089	.....	2,358	.....	122
.....	737	1,065	3,100	1,283	.....	430	11,815	108	296	.....	123
.....	113	1,114	.....	840	.....	62	9,637	1,602	650	.....	124
.....	.....	110	49	.....	.....	297	3,615	1,844	1,258	.....	125
.....	.....	.....	.....	.....	.....	409	2,457	845	577	.....	126
.....	.....	839	1,000	1,532	.....	219	9,795	709	8,178	.....	127
.....	168	.....	2,196	238	.....	300	7,644	410	948	.....	128
11,000	873	5,739	61,299	9,190	.....	354	118,966	16,394	2,623	.....	129
.....	.....	157	3,100	269	.....	293	9,638	1,233	18	.....	130
817	518	2,504	.....	2,381	.....	257	22,985	558	819	.....	131
.....	666	2,166	14,245	7,070	.....	1,322	114,959	.....	4,919	.....	132
.....	332	.....	1,500	324	.....	307	6,955	289	663	168	133
.....	.....	2,229	1,540	2,087	130	164	17,526	2,421	474	7,500	134
.....	.....	276	2,500	240	.....	577	7,028	338	.....	.....	135
.....	.....	2,053	17,300	3,057	.....	418	49,727	.....	751	5,386	136
.....	330	2,125	500	2,502	.....	280	30,362	1,186	.....	.....	137
183	160	3,121	60,500	6,904	.....	375	95,787	368	225	20,028	138
.....	1,330	3,102	.....	2,194	.....	1,002	37,245	.....	11,495	.....	139
.....	178	4,190	.....	261	.....	116	6,880	198	.....	.....	140
.....	.....	.....	.....	.....	.....	48	3,032	338	2,647	.....	141
.....	.....	150	400	127	.....	5	2,292	451	456	.....	142
.....	224	.....	300	40	.....	56	4,057	10	1,336	.....	143
.....	127	1,065	.....	810	.....	1,029	18,062	557	.....	.....	144
.....	302	242	16,565	1,072	.....	828	43,159	.....	12,700	.....	145
.....	540	4,312	5,900	3,412	.....	1,397	40,230	9,716	4,787	.....	146
.....	.....	2,571	9,186	2,408	.....	689	26,808	36	5,433	.....	147
.....	983	3,865	.....	9,643	.....	417	140,788	11,004	23,086	.....	148
.....	.....	1,089	1,734	4,760	.....	59	44,850	1,974	5,474	20,856	149
.....	474	487	5,900	1,296	23	67	21,997	3,891	1,047	8,192	150

* Including $1,375 Board of Health expenses, largely increased owing to small-pox visitation; and $1,200 rebate on Sylvester Industrial Mortgage.

† Omitting $2,009 previously overstated, of debentures in Sinking Fund.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS

Municipalities.	Assets on December 31, 1905.—*Continued.*				
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$	$
101. Hensall	4,677	25	655	7,029	12,685
102. Hespeler	20,000	12,656	16,728	5,244	56,184
103. Hintonburg	317	101,940	11,000	3,254	135,001
104. Holland Landing	.....	.....	505	19	992
105. Huntsville	.....	58,543	13,180	2,782	78,381
106. Ingersoll	25,957	.....	31,500	50,222	193,984
107. Iroquois	12,000	50,000	7,000	15,651	85,458
108. Kemptville	3,363	.....	11,650	.....	19,094
109. Kenora	.....	220,481	31,718	72,493	363,744
110. Kincardine	*1,717	61,154	38,000	2,461	125,395
111. Kingsvilte	.....	35,275	21,600	1,703	59,617
112. Lakefield	.....	.....	10,300	200	19,871
113. Lanark	.....	.....	9,700	.....	10,312
114. Lancaster	.....	.....	610	.....	1,059
115. Leamington	.....	40,000	4,300	16,707	71,045
116. Lindsay	13,462	92,546	58,271	79,276	291,607
117. Listowel	20,000	42,000	12,525	521	93,038
118. Little Current	.....	.....	3,100	.....	4,590
119. L'Orignal	.....	.....	.....	.....	1,795
120. Lucan	.....	.....	3,700	.....	10,734
121. Lucknow	1,500	10,000	5,800	10,885	44,517
122. Madoc	5,000	9,000	5,800	969	23,127
123. Markdale	.....	.....	5,370	7,997	13,771
124. Markham	4,407	10,100	3,500	30	20,289
125. Marmora	.....	.....	.....	281	3,383
126. Massey	.....	.....	300	20	1,742
127. Mattawa	.....	.....	12,232	6	21,125
128. Maxville	.....	.....	78	15	1,451
129. Meaford	†29,742	25,000	27,300	8,148	109,207
130. Merrickville	.....	.....	8,500	60	9,811
131. Merritton	817	77,800	13,206	390	93,590
132. Midland	.....	122,000	15,575	1,944	144,438
133. Millbrook	.....	.....	6,900	515	8,535
134. Milton	3,190	29,845	8,700	.....	52,130
135. Milverton	.....	200	1,000	.....	1,538
136. Mitchell	.....	30,000	14,250	1,105	51,492
137. Morrisburg	.....	62,000	3,175	16,967	83,328
138. Mount Forest	28,828	43,000	9,000	27,162	128,611
139. Napanee	.....	5,600	27,550	479	45,124
140. Newboro	.....	.....	1,750	426	2,374
141. Newburgh	.....	.....	200	.....	3,185
142. Newbury	.....	.....	2,000	.....	2,907
143. Newcastle	.....	.....	3,000	300	4,646
144. New Hamburg	2,300	.....	10,995	154	14,006
145. New Liskeard	.....	.....	9,100	980	22,780
146. Newmarket	40	54,700	20,125	3,500	92,868
147. Niagara	.....	51,500	23,150	3,959	84,078
148. North Bay	.....	96,887	23,696	38,590	193,263
149. North Toronto	.....	52,798	9,832	17,513	108,447
150. Norwich	.....	.....	4,800	3,623	21,553

*Omitting $1,900 loan to Water and Light Commissioners, written off.

†Including $20,178 Industrial Mortgages not previously reported.

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.

County levy.	Local school rates.	Railway debentures.	School debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	.....	.....	.....	11,452	4,181	.....	100	15,733	101
.....	.....	.....	12,101	.....	16,977	25,815	1,475	.....	310	56,678	102
2,730	4,530	.....	6,014	75,490	.....	21,319	10,500	.....	1,878	122,461	103
136	.....	.....	.....	.....	.....	.....	.....	.....	79	215	104
.....	744	.....	18,127	20,824	23,870	.....	4,494	.....	184	68,243	105
.....	.....	20,000	5,144	.....	.....	195,012	30,427	.....	3,795	254,378	106
508	2,438	.....	708	39,817	5,760	35,777	1,706	.....	.....	86,714	107
.....	4,146	.....	.....	.....	.....	13,172	.....	.....	237	17,555	108
.....	1,550	.....	26,680	147,798	52,000	74,494	54,700	7,806	1,117	366,145	109
.....	4,729	.....	.....	32,475	11,038	22,798	*	.....	1,316	72,356	110
.....	.....	1,594	3,864	23,780	12,121	5,053	.....	.....	490	46,902	111
.....	.....	.....	3,798	.....	.....	22,983	2,376	.....	50	29,207	112
.....	.....	.....	1,565	.....	.....	4,245	.....	.....	.....	5,810	113
.....	104	.....	.....	.....	.....	.....	.....	.....	53	157	114
.....	5,416	982	11,598	23,280	12,971	34,602	3,292	.....	1,724	93,865	115
3,299	.....	22,586	44,810	86,511	.....	253,855	23,652	.....	3,021	437,734	116
.....	.....	.....	.....	30,540	.....	121,193	5,727	.....	392	157,852	117
.....	600	.....	83	.....	.....	2,192	.....	.....	355	3,230	118
248	932	.....	.....	.....	.....	.....	.....	.....	1	1,181	119
227	.....	.....	9,000	.....	.....	7,159	.....	.....	.....	16,386	120
251	.....	.....	.....	10,000	.....	14,692	.....	4,076	624	29,643	121
786	.....	.....	1,740	.....	8,698	10,882	2,320	.....	.....	24,426	122
.....	72	.....	2,557	.....	.....	10,084	.....	.....	80	12,793	123
487	455	.....	2,820	6,235	549	6,639	.....	.....	141	17,326	124
407	2,200	.....	.....	.....	.....	880	.....	.....	893	4,380	125
.....	.....	.....	.....	.....	.....	.....	.....	.....	720	720	126
.....	4,054	.....	.....	.....	.....	24,526	4,000	.....	1,125	33,705	127
.....	460	.....	4,832	.....	.....	.....	.....	.....	180	5,472	128
.....	.....	30,953	4,169	26,200	.....	96,900	13,556	.....	13,212	184,990	129
.....	.....	800	.....	.....	.....	7,035	.....	.....	160	7,995	130
.....	.....	.....	5,167	39,861	.....	.....	.....	.....	321	45,349	131
2,048	.....	.....	14,850	67,473	27,404	94,655	42,755	.....	5,276	254,461	132
.....	375	.....	1,930	.....	.....	2,270	.....	.....	124	4,699	133
.....	.....	.....	.....	14,006	8,000	27,034	.....	.....	.....	49,040	134
.....	.....	.....	.....	.....	.....	3,868	.....	.....	.....	3,868	135
1,041	.....	.....	.....	17,667	.....	46,786	4,131	.....	800	70,425	136
.....	.....	.....	1,093	14,147	28,908	3,924	15,854	.....	763	64,689	137
.....	.....	.....	6,097	25,435	11,091	105,095	6,000	.....	204	153,922	138
2,600	7,900	.....	7,044	.....	.....	31,504	3,246	.....	4,654	56,948	139
.....	129	.....	386	.....	.....	410	.....	.....	.....	925	140
345	1,624	.....	.....	.....	.....	.....	.....	.....	281	2,250	141
183	70	.....	.....	.....	.....	3,313	.....	.....	.....	3,566	142
.....	400	.....	481	.....	.....	.....	.....	.....	366	1,247	143
.....	.....	.....	4,873	.....	.....	16,782	.....	.....	220	21,875	144
.....	.....	.....	9,698	.....	.....	7,758	1,834	.....	3,156	22,446	145
.....	.....	.....	11,502	21,083	14,627	20,881	14,500	.....	.....	82,593	146
836	.....	.....	.....	20,275	6,500	11,928	6,462	.....	1,245	47,246	147
.....	5,549	.....	20,685	66,817	.....	51,278	47,800	.....	113	192,242	148
.....	.....	.....	16,000	54,243	.....	28,518	17,391	.....	.....	116,152	149
.....	892	.....	6,083	.....	.....	19,470	3,300	1,050	10	30,805	150

* Omitting $1,400 *re* Water and Light Commissioners' account, written off.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Municipalities.	Receipts, 1905.						
	Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.
	$	$	$	$	$	$	$
151. Norwood, Peterborough	197	5,456	420	37	.....	.....	.....
152. Oakville, Halton	9,566	13,226	211	46	.....	233	.....
153. Oil Springs, Lambton	.....	7,963	360	41	.....	6	.....
154. Omemee, Victoria	242	2,704	112	4	.....	56	.....
155. Orangeville, Dufferin	.....	23,841	865	327	2,443	618	4,823
156. Orillia, Simcoe	816	43,247	2,279	1,408	*25,871	546	.....
157. Oshawa, Ontario	.....	36,598	1,163	362	.....	2,892	61,398
158. Ottawa East, Carleton	104	9,672	108	129	.....	462	.....
159. Owen Sound, Grey	38,085	64,087	2,435	3,664	†36,603	6,791	7,106
160. Paisley, Bruce	2,142	7,027	573	603	.....	19	.....
161. Palmerston, Wellington	.....	14,832	368	215	.....	3,687	1,561
162. Paris, Brant	3,797	28,579	579	593	12,507	.....	.....
163. Parkhill, Middlesex	232	10,286	343	240	.....	283	500
164. Parry Sound, Parry Sound	242	16,729	984	496	8,738	510	19,846
165. Pembroke, Renfrew	.....	41,416	1,693	825	8,694	171	.....
166. Penetanguishene, Simcoe	498	18,254	1,030	.....	2,140	325	500
167. Perth, Lanark	6,189	29,508	1,484	737	2,919	146	.....
168. Petrolea, Lambton	.....	44,001	1,323	842	16,688	.....	.....
169. Picton, Prince Edward	.....	26,228	1,450	421	10,625	44	1,833
170. Point Edward, Lambton	1,067	4,505	205	7	.....	.....	.....
171. Port Arthur, Thunder Bay	2,772	60,681	3,638	2,899	‡89,359	1,686	.....
172. Port Carling, Muskoka	1,034	1,872	52	72	.....	117	.....
173. Port Colborne, Welland	.....	7,865	215	59	1,700	5	814
174. Port Dalhousie, Lincoln	2,688	6,376	638	69	1,060	.....	.....
175. Port Dover, Norfolk	457	6,525	154	152	.....	.....	.....
176. Port Elgin, Bruce	.....	7,384	288	187	.....	52	6,150
177. Port Hope, Durham	1,321	32,391	2,053	558	4,490	1,022	1,077
178. Port Perry, Ontario	199	12,111	316	482	3,412	12	.....
179. Port Rowan, Norfolk	229	3,488	86	24	.....	.....	.....
180. Portsmouth, Frontenac	573	2,215	60	4	.....	.....	.....
181. Port Stanley, Elgin	394	2,731	201	53	.....	.....	.....
182. Powassan, Parry Sound	.....	1,588	112	40	.....	.....	.....
183. Prescott, Grenville	.....	23,209	1,898	1,388	‖11,593	34	747
184. Preston, Waterloo	1,702	18,823	480	45	2,637	.....	.....
185. Rainy River, Rainy River	367	10,272	940	86	.....	1,147	.....
186. Renfrew, Renfrew	.....	24,804	971	518	8,348	412	13,596
187. Richmond, Carleton	51	1,984	24	65	.....	55	.....
188. Richmond Hill, York	204	3,318	110	153	.....	.....	.....
189. Ridgetown, Kent	.....	17,911	701	605	.....	60	2,622
190. Rockland, Russell	1,408	4,693	217	.....	.....	.....	.....
191. St. Marys, Perth	1,144	32,999	857	356	7,336	.....	3,230
192. Sandwich, Essex	406	12,638	514	317	2,227	133	.....
193. Sarnia, Lambton	483	91,956	2,638	1,689	21,762	4,096	4,636
194. Sault Ste. Marie, Algoma	352	96,290	2,388	2,117	.....	25,347	5,893
195. Seaforth, Huron	2,591	15,820	768	531	812	300	5,025
196. Shelburne, Dufferin	296	7,751	273	293	1,340	.....	.....
197. Simcoe, Norfolk	.....	26,300	886	145	.....	171	.....
198. Smith's Falls, Lanark	4,142	43,664	2,024	860	10,061	13	1,510
199. Southampton, Bruce	813	9,445	275	142	725	.....	.....
200. Springfield, Elgin	691	2,678	55	82	.....	.....	.....

* Including $13,058 electric light and power rates.

† Including $24,942 electric light and power rates.

‡ Including $32,064 electric light and power rates, $44,584 electric railway earnings and $8,833 telephone rents.

‖ Including $6,896 electric light rates.

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.						
Borrowed for current expenses.	Borrowed on debentures for schools.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total Receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Streets, bridges and parks.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
1,200	.....	.....	.....	...	82	7,392	206	568	31	135	1,646	151
27,959	1,600	.....	.....	...	51	52,892	751	1,086	282	560	4,814	152
6,353	.....	6,000	105	...	197	21,025	456	67	19	246	2,421	153
850	5,500	1,773	.....	...	.....	11,241	241	90	3	245	637	154
19,586	.....	19,002	225	...	459	72,189	849	3,312	108	832	1,333	155
32,156	.....	44,000	35	...	3,088	153,446	2,346	10,865	25	2,162	7,841	156
49,516	.....	50,900	166	...	969	203,964	1,681	5,336	126	1,191	6,563	157
.....	10,000	8,952	63	...	5	29,495	496	2,118	80	343	7,620	158
23,997	.....	25,000	.....	14	*11,476	219,258	5,762	26,598	965	2,670	24,600	159
3,500	.....	1,060	.....	164	105	15,193	625	611	8	143	1,814	160
12,827	.....	14,655	.....	...	155	48,300	483	5,941	451	482	1,442	161
15,500	.....	7,500	.....	..	697	69,752	1,949	10,637	175	1,449	1,927	162
26,900	.....	5,199	192	19	614	44,808	474	890	10	583	2,274	163
13,542	2,500	16,000	.....	...	1,446	81,033	1,347	4,321	240	1,618	14,113	164
12,146	.....	35,885	.....	...	224	101,054	2,035	9,229	239	1,212	7,541	165
7,238	.....	4,600	.....	...	304	34,889	972	2,987	40	643	9,279	166
59,127	620	10,801	93	...	457	112,081	1,068	4,713	185	1,873	3,243	167
8,410	.....	15,422	896	...	309	87,891	3,342	13,996	531	2,569	9,592	168
3,580	.....	.....	.....	..	904	45,085	1,982	10,459	200	841	5,299	169
2,112	.....	645	.....	...	63	8,604	415	118	.. ...	208	1,108	170
186,856	.....	55,000	1,250	...	1,021	405,162	6,083	13,503	4,585	37,650	34,067	171
175	1,500	2,000	25	...	113	6,960	147	.....	.....	249	423	172
1,500	.....	.....	.....	...	.....	12,158	872	965	178	180	1,638	173
1,000	.....	.....	.....	...	26	11,857	289	1,729	.....	90	96	174
3,012	.....	8,000	.....	...	90	18,390	338	213	101	320	911	175
224	.....	.....	.....	66	129	14,480	448	777	115	177	524	176
67,011	.....	.....	.....	...	1,919	111,842	3,823	6,002	215	910	4,960	177
11,264	.....	.....	.....	...	88	27,884	758	2,238	.....	612	2,214	178
4,913	.....	1,523	68	...	20	10,351	183	280	41	76	2,047	179
.....	.....	.....	.....	...	10	2,862	295	22	20	111	263	180
2,385	.....	.....	.....	...	9	5,773	336	.....	61	148	841	181
150	.....	.....	.....	...	300	2,190	61	.....	.....	85	424	182
13,027	.....	1,934	.....	...	963	54,793	2,097	11,868	177	1,652	9,882	183
14,419	.....	47,758	334	...	165	86,363	951	3,463	656	663	18,692	184
32,000	25,000	17,322	.....	...	278	87,412	1,923	409	75	566	6,205	185
41,695	.....	8,000	.....	...	437	98,781	1,156	9,611	5	1,197	3,480	186
7	.....	.....	.....	...	136	2,322	115	.....	.....	72	551	187
300	.....	.....	.....	..	87	4,172	212	301	15	251	508	188
12,000	.....	6,000	127	...	86	40,112	636	2,324	743	780	803	189
480	6,000	.....	.....	...	.....	12,798	276	529	112	68	1,373	190
64,022	.....	.....	.....	...	1,168	111,112	1,471	8,880	1,351	2,540	4,225	191
8,000	.....	4,300	81	50	3,037	31,703	1,221	3,899	150	511	3,575	192
221,638	10,400	93,875	521	...	1,480	455,174	5,322	20,488	2,718	2,619	27,872	193
.....	30,000	72,111	.....	...	594	235,092	4,682	22,208	59	3,081	8,385	194
14,713	.....	2,400	.....	...	86	43,046	973	2,931	216	1,148	4,381	195
2,800	.....	.....	.....	...	262	13,015	414	1,943	38	425	616	196
1,121	.....	13,000	108	...	547	42,278	963	3,665	92	1,032	3,289	197
285,668	.....	84,193	403	...	1,508	434,046	1,599	12,199	1,242	1,350	3,750	198
9,498	.....	8,000	.....	...	132	29,030	551	1,689	664	594	2,354	199
3,000	.....	.....	.....	...	.....	6,506	160	20	.....	127	1,528	200

*Including $1,618 from sale of real estate, $340 sale of horses, $3,428 sale of electric light and power stock, $3,140 sale of gas by-products, and $1,049 for gas extension.

STATISTICS OF ONTARIO VILLAGE AND TOWN
RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities.	Disbursements, 1905.—*Continued.*							
	Waterworks and electric light construction.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Sinking Fund investments and deposits.
	$	$	$	$	$	$	$	$
151. Norwood	.....	.....	4	82	60	577	1,896	.....
152. Oakville	.....	28	25	314	544	1,615	5,630	1,322
153. Oil Springs	.....	24	20	41	12	762	3,099	.....
154. Omemee	.....	.....	10	70	10	199	4,290	.....
155. Orangeville	482	.....	10	174	945	933	7,105	6,019
156. Orillia	70,203	1,196	80	415	1,489	3,014	15,684	350
157. Oshawa	75,880	519	632	685	1,284	2,209	10,392	.....
158. Ottawa East	.....	585	100	.....	62	546	13,996	.....
159. Owen Sound	35,111	6,608	1,422	1,522	4,307	43	19,201	22,874
160. Paisley	.....	272	304	44	322	416	2,108	.....
161. Palmerston	.....	1,200	.....	22	493	910	3,600	196
162. Paris	5,293	.....	124	486	621	1,381	8,838	.....
163. Parkhill	.....	122	158	23	252	565	3,699	1,081
164. Parry Sound	8,816	1,100	160	179	514	.....	6,668	.....
165. Pembroke	7,286	.....	467	.....	1,425	2,050	11,339	827
166. Penetanguishene	2,319	3,562	60	44	560	1,060	4,644	958
167. Perth	30,013	.....	187	59	955	3,283	9,435	.....
168. Petrolea	1,582	.....	77	367	972	1,921	11,100	.....
169. Picton	1,861	350	230	1,069	750	1,340	9,200	.....
170. Point Edward	.....	6	5	89	492	.....	1,500	.....
171. Port Arthur	98,660	40,103	925	1,261	3,626	.....	15,923	4,802
172. Port Carling	.....	1,151	90	30	6	.....	1,901	.....
173. Port Colborne	.....	50	11	20	121	545	2,000	.....
174. Port Dalhousie	.....	83	10	35	618	1,056	2,207	.....
175. Port Dover	.....	10,061	.....	33	26	600	994	.....
176. Port Elgin	.....	.....	178	46	214	492	3,100	2,714
177. Port Hope	3,025	.....	50	462	643	2,362	9,366	1,145
178. Port Perry	3,204	.....	.....	96	158	805	4,598	.....
179. Port Rowan	.....	.....	5	.....	12	340	1,539	.....
180. Portsmouth	.....	.....	3	.....	77	575	996	.....
181. Port Stanley	.....	253	78	23	36	280	1,118	.....
182. Powassan	.....	11	15	.....	10	.....	500	.....
183. Prescott	1,132	905	40	425	607	.....	7,145	.....
184. Preston	29,723	.....	25	202	465	1,040	5,037	.....
185. Rainy River	.....	3,782	136	187	57	.....	28,117	.....
186. Renfrew	18,389	.....	634	637	652	1,331	9,584	.....
187. Richmond	.....	.....	1	11	2	199	409	130
188. Richmond Hill	.....	.....	3	10	9	300	1,267	.....
189. Ridgetown	.....	.....	11	172	707	927	5,073	.....
190. Rockland	.....	30	34	8	17	300	8,967	.....
191. St. Marys	7,021	30	549	576	1,262	.....	8,450	.....
192. Sandwich	1,737	.....	134	411	182	608	2,000	.....
193. Sarnia	46,611	.....	675	1,683	4,239	4,682	26,097	1,904
194. Sault Ste. Marie	1,965	16,736	561	819	3,452	.....	24,514	6,648
195. Seaforth	951	.....	100	39	458	975	5,314	2,816
196. Shelburne	.....	.....	45	67	255	.....	2,808	.....
197. Simcoe	.....	385	78	204	794	1,950	6,192	.....
198. Smith's Falls	2,065	.....	403	2,604	1,342	.....	12,900	.....
199. Southampton	2,605	.....	77	29	150	1,010	3,299	.....
200. Springfield	.....	.....	15	3	25	200	568	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets on December, 31, 1905.			
Other investments and deposits.	School debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	170	.....	1,200	268	.....	359	7,202	190	175	.....	151
1,275	79	775	23,372	2,237	.....	*6,167	50,876	2,016	2,043	14,125	152
.....	180	1,294	10,608	1,226	.....	366	20,841	184	5,190	.....	153
.....	90	93	4,555	433	.....	86	11,052	189	.....	.....	154
15,300	181	3,306	23,767	5,830	.....	1,454	71,940	249	2,828	17,782	155
.....	843	13,072	2,930	17,459	820	1,186	151,986	1,466	8,580	2,107	156
15,387	.....	6,937	61,260	11,354	600	1,859	203,895	69	3,741	.....	157
.....	207	676	.....	1,499	.....	2	28,330	1,165	3,285	.....	158
.....	1,757	3,093	13,825	33,985	184	1,957	206,484	12,774	94,528	149,954	159
.....	.....	675	3,500	757	.....	297	11,926	3,267	274	.....	160
.....	93	4,348	21,327	6,395	.....	782	48,165	135	48	2,590	161
.....	488	5,894	23,000	4,959	.....	1,382	68,603	1,149	161	.....	162
.....	.....	500	31,511	1,544	.....	439	44,125	683	983	8,609	163
18,756	815	3,242	11,567	5,481	.....	1,747	80,684	319	12,050	.....	164
.....	1,982	8,341	36,199	8,660	1,455	767	101,054	.....	40,946	5,974	165
.....	232	1,566	1,000	3,973	121	862	34,882	7	4,265	3,495	166
.....	700	3,640	16,303	3,712	.....	†25,919	105,288	6,793	1,099	.....	167
.....	935	13,020	17,047	10,140	.....	700	87,891	.....	7,933	.....	168
1,577	.....	2,117	5,392	1,472	.....	946	45,085	.....	1,198	.....	169
....	.....	505	2,112	1,343	.....	58	7,959	645	1,022	176	170
4,000	.....	2,943	87,442	38,021	1,955	4,804	400,353	4,809	19,991	67,831	171
.....	102	60	175	251	.....	172	4,757	2,203	104	.....	172
.....	182	1,757	1,538	1,677	.....	166	11,900	258	65	.....	173
.....	.....	971	1,000	676	.....	22	8,882	2,975	35	.....	174
.....	221	908	3,000	549	.....	115	18,390	.....	1,432	.....	175
.....	524	1,849	233	1,807	.....	1,282	14,480	.....	1,914	2,714	176
3,236	234	2,032	57,500	11,286	.....	‡3,421	110,672	1,170	20,365	10,387	177
91	.....	2,089	8,700	2,075	.....	154	27,792	92	2,427	.....	178
.....	.....	.....	5,162	140	.....	458	10,283	68	269	.....	179
.....	.....	.....	.....	.....	.....	7	2,369	493	1,481	.....	180
.....	.....	.....	2,285	65	.....	142	5,666	107	1,831	.....	181
.....	.....	.....	150	7	.....	68	1,331	859	290	.....	182
853	708	3,341	5,916	7,132	.....	913	54,793	.....	14,994	.....	183
15,000	828	2,879	.....	3,565	.....	776	83,965	2,398	.....	.....	184
.....	376	706	38,500	2,319	878	2,552	86,788	624	6,472	.....	185
10,040	163	5,151	29,316	6,825	.....	607	98,778	3	8,594	.....	186
.....	.....	154	7	280	.....	34	1,965	357	791	1,452	187
.....	67	.....	300	125	.....	679	4,047	125	75	.....	188
1,851	721	3,464	17,031	3,848	.....	172	39,263	849	1,550	.....	189
.....	.....	.....	.....	2	.....	60	11,776	1,022	5,256	.....	190
.....	97	4,444	60,800	2,323	....	1,985	106,004	5,108	2,186	.....	191
.....	184	1,423	11,448	1,917	.....	140	29,540	2,163	7,752	.....	192
42,217	3,474	31,644	200,192	25,180	.....	‖6,778	454,695	479	73,207	11,360	193
46,456	.....	5,138	56,487	28,501	4,540	355	234,587	505	52,288	23,739	194
3,500	.....	.....	14,613	3,350	44	833	42,642	404	1,597	29,102	195
.....	184	431	2,800	1,112	.....	359	11,497	1,518	142	.....	196
.....	446	12,566	5,126	4,177	.....	1,319	42,278	.....	1,845	.....	197
1,227	856	11,046	360,483	19,120	.....	1,860	434,046	.....	3,798	.....	198
.....	231	1,320	6,500	2,419	443	665	24,600	4,430	2,481	.....	199
.....	.....	105	3,316	117	.....	33	6,217	289	119	.....	200

* Including $6,055 shortage of late treasurer.
† Including $25,000 bonus to Wampole Company.
‡ Including $1,350 loan to Harbor Commissioners.
‖ Including $1,991 Library Account and $675 Board of Health Account.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities.	Assets on December 31st, 1905.—*Continued.*				
	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total assets.
	$	$	$	$	$
151. Norwood	.....	.....	3,240	1,560	5,165
152. Oakville	1,275	.....	16,300	14,267	50,026
153. Oil Springs	.....	.....	5,050	75	10,499
154. Omemee	.....	.....	1,400	199	1,757
155. Orangeville	15,325	51,015	24,558	1,000	112,757
156. Orillia	.....	361,000	104,500	4,070	481,723
157. Oshawa	65,943	130,000	17,019	13,356	230,128
158. Ottawa East	500	.....	4,890	.....	9,840
159. Owen Sound	33,000	268,638	108,000	65,828	732,722
160. Paisley	14,000	.....	20,800	.....	38,341
161. Palmerston	21,018	9,500	8,031	5,600	46,922
162. Paris	.....	123,343	67,000	4,000	195,653
163. Parkhill	.....	.....	12,482	6	22,763
164. Parry Sound	3,095	87,023	9,700	3,282	115,499
165. Pembroke	.....	75,000	31,500	20,202	173,622
166. Penetanguishene	4,500	43,729	15,378	16,723	88,097
167. Perth	.....	12,400	26,982	4,832	52,106
168. Petrolea	.....	189,886	57,800	10,392	266,011
169. Picton	1,577	49,000	14,575	3,935	70,285
170. Point Edward	.....	.....	2,450	6,500	10,793
171. Port Arthur	4,000	470,712	46,402	159,155	772,900
172. Port Carling	.....	.....	2,500	1,002	5,809
173. Port Colborne	9,186	23,225	1,875	15,500	50,109
174. Port Dalhousie	6,500	.....	1,100	8	10,618
175. Port Dover	.....	.....	14,000	.....	15,432
176. Port Elgin	17,829	.....	10,640	4,623	37,720
177. Port Hope	17,986	82,154	190,998	8,528	331,588
178. Port Perry	91	21,147	13,350	1,110	38,217
179. Port Rowan	.....	.....	.....	.....	337
180. Portsmouth	.....	.....	3,109	.....	5,083
181. Port Stanley	.....	.....	1,540	.....	3,478
182. Powassan	.....	.....	.....	.....	1,149
183. Prescott	853	118,000	56,375	1,402	191,624
184. Preston	15,000	29,723	22,797	13,104	83,022
185. Rainy River	.....	.....	5,990	13,447	26,533
186. Renfrew	28,040	99,514	21,925	63,528	221,604
187. Richmond	.....	.....	1,875	340	4,815
188. Richmond Hill	.....	.....	4,154	100	4,454
189. Ridgetown	1,851	.....	24,600	.....	28,850
190. Rockland	.....	.....	530	.....	6,808
191. St. Marys	.....	68,000	26,700	13,230	115,224
192. Sandwich	.....	20,455	8,560	9,180	48,110
193. Sarnia	76,697	145,000	76,900	186,252	569,895
194. Sault Ste. Marie	295,385	.....	44,684	980	417,581
195. Seaforth	22,675	13,000	20,500	.....	87,278
196. Shelburne	.....	17,900	11,950	7,937	39,447
197. Simcoe	2,920	.....	26,445	.....	31,210
198. Smith's Falls	1,227	318,971	67,104	26,280	417,380
199. Southampton	10,000	28,154	8,200	425	53,690
200. Springfield	.....	75	2,863	54	3,400

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabilities on December 31, 1905.											
County levy.	Local school rates.	Railway debentures.	School debentures.	Waterworks debentures.	Electric light debentures.	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	.....	.....	4,232	.....	.....	.....	.....	.....	210	4,442	151
.....	.....	.....	3,370	.....	.....	33,983	7,287	.....	1,950	46,590	152
378	.....	.....	7,820	.....	.....	19,815	.....	.....	.....	28,013	153
.....	.....	.....	5,410	.....	.....	1,898	.....	.....	.....	7,308	154
1,015	3,258	26,026	1,775	35,936	.....	70,532	.....	.....	1,535	140,077	155
3,521	1,200	.....	16,854	37,716	203,532	86,625	32,156	.....	4,370	385,974	156
.....	.....	.....	.....	128,632	.....	102,411	49,517	.....	175	280,735	157
546	902	.....	11,342	.....	.....	25,036	.....	.....	.....	37,826	158
3,750	24,918	108,428	27,724	132,432	96,000	338,792	82,809	8,761	2,960	826,574	159
.....	1,650	.....	.....	.....	.....	19,058	.....	.....	107	20,815	160
.....	.....	.....	10,768	.....	9,899	83,479	.....	.....	.....	104,146	161
.....	.....	.....	2,744	51,796	22,525	29,985	.....	.....	.....	107,050	162
606	1,001	.....	8,000	.....	.....	17,699	.....	.....	641	27,947	163
.....	.....	18,094	8,657	33,509	21,682	22,457	13,542	.....	5,601	123,542	164
2,671	13,176	20,000	6,440	70,404	.....	54,907	33,379	.....	705	201,682	165
1,234	2,072	.....	3,293	28,553	.....	44,105	11,238	.....	4,890	95,385	166
.....	4,675	.....	2,220	.....	11,500	60,465	59,127	.....	1,332	139,319	167
.....	10,350	.....	1,712	135,180	.....	76,839	2,410	.....	2,082	228,573	168
.....	.....	.....	.....	18,332	16,064	.....	3,580	.....	953	38,929	169
338	1,621	.....	.....	.....	.....	16,678	.....	.....	514	19,151	170
.....	7,385	75,000	37,500	85,000	34,073	428,219	150,419	46,082	2,640	866,318	171
.....	592	.....	2,846	.....	.....	1,940	.....	.....	1,446	6,824	172
.....	.....	.....	2,006	13,371	.....	22,047	.....	.....	.....	37,424	173
.....	1,649	.....	.....	.....	.....	14,559	.....	.....	398	16,606	174
.....	994	.....	746	.....	.....	9,133	12	.....	.....	10,885	175
.....	.....	.....	2,242	.....	.....	37,670	224	.....	61	40,197	176
.....	.....	.....	8,107	44,915	.....	187,771	23,693	.....	4,588	269,074	177
.....	.....	.....	.....	.....	15,418	25,140	12,725	.....	906	54,189	178
.....	.....	.....	.....	.....	.....	1,523	303	.....	25	1,851	179
575	739	.....	.....	.....	.....	.....	.....	.....	41	1,355	180
252	11	.....	.....	.....	.....	.....	950	.....	72	1,285	181
.....	842	.....	.....	.....	.....	.....	.....	.....	97	939	182
.....	2,188	.....	15,846	93,020	18,772	28,577	10,768	.....	.....	169,171	183
.....	5	.....	5,577	.....	26,093	46,501	14,419	.....	100	92,695	184
.....	669	.....	24,624	.....	.....	17,957	1,500	.....	92	44,842	185
753	.....	11,924	5,675	73,767	.....	57,502	41,695	.....	.....	191,316	186
199	625	.....	2,000	.....	.....	3,344	.....	.....	.....	6,168	187
.....	.....	.....	2,539	.....	.....	.....	.....	.....	.....	2,539	188
.....	.....	9,167	2,219	.....	.....	57,859	.....	.....	.....	69,245	189
330	3,616	.....	6,000	.....	.....	.....	496	.....	952	11,394	190
.....	.....	.....	2,319	39,738	12,272	36,350	13,000	.....	1,809	105,488	191
608	3,525	.....	192	13,818	.....	15,305	8,037	.....	899	42,384	192
.....	.....	.....	61,888	115,958	.....	320,430	89,548	.....	36,693	624,517	193
.....	15,387	.....	41,187	.....	.....	573,036	.....	.....	13,063	642,673	194
.....	.....	.....	5,500	3,500	8,500	70,989	2,500	.....	1,020	92,009	195
441	.....	.....	7,495	12,265	.....	8,052	1,000	.....	274	29,527	196
.....	.....	.....	*17,458	.....	.....	55,039	1,121	.....	949	74,567	197
.....	.....	900	13,486	181,274	.....	177,784	10,185	.....	.....	383,629	198
.....	.....	.....	6,414	24,332	.....	28,914	3,000	.....	.....	62,690	199
180	.....	.....	.....	.....	.....	899	1,000	.....	.....	2,079	200

* Including $200 previously understated.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities and Counties in which located.	Receipts, 1905. Balance from 1904.	Municipal and school taxes.	Licenses.	Fees, rents, fines, etc.	Water, electric light and gas rates.	Interest and dividends.	Refund of money invested.
	$	$	$	$	$	$	$
201. Stayner, Simcoe	931	6,017	169	.....	904	.....	.....
202. Steelton, Algoma	2,036	21,390	131	145	.....	.....	.....
203. Stirling, Hastings	403	6,343	165	86	.....	25	453
204. Stouffville, York	.....	5,289	190	10	462	4	.....
205. Strathroy, Middlesex	.....	28,376	684	239	*7,604	3	173
206. Streetsville, Peel	1,148	2,602	92	7	.....	.....	.....
207. Sturgeon Falls, Nipissing	188	7,308	1,460	118	3,431	.....	.....
208. Sturgeon Point, Victoria	42	585	.....	11	.....	.....	.....
209. Sudbury, Nipissing	.....	18,414	1,411	689	†14,711	.....	.....
210. Sundridge, Parry Sound	299	1,301	26	46	.....	.....	.....
211. Sutton, York	445	2,702	50	46	.....	64	966
212. Tara, Bruce	1,623	3,441	104	6	.....	81	.....
213. Teeswater, Bruce	1,831	5,021	324	122	.....	244	2,603
214. Thamesville, Kent	1,590	6,103	.....	155	‡3,163	236	.....
215. Thedford, Lambton	17	2,175	61	25	.....	.....	.....
216. Thessalon, Algoma	.....	6,090	333	39	3,539	.....	.....
217. Thornbury, Grey	631	5,155	74	86	.....	57	2,000
218. Thorold, Welland	61	15,139	494	47	‡3,187	.....	.....
219. Tilbury, Kent	20	9,520	595	5	698	366	2,531
220. Tillsonburg, Oxford	2,197	24,565	955	548	.....	1,959	1,006
221. Tiverton, Bruce	87	1,713	54	42	.....	.....	.....
222. Toronto Junction, York	3,313	84,794	946	207	16,342	552	16,957
223. Tottenham, Simcoe	154	3,637	128	85	1,462	.....	.....
224. Trenton, Hastings	.....	26,816	1,217	452	2,753	123	.....
225. Tweed, Hastings	1,026	7,523	467	34	.....	.....	5,000
226. Uxbridge, Ontario	120	13,340	441	646	.....	135	1,500
227. Vankleek Hill, Prescott	4,021	8,404	556	120	.....	38	.....
228. Vienna, Elgin	406	1,968	48	83	.....	35	.....
229. Walkerton, Bruce	.....	21,561	1,028	329	2,730	96	.....
230. Walkerville, Essex	.....	50,699	680	164	.....	2,249	.....
231. Wallaceburg, Kent	124	20,877	897	237	.....	.....	100
232. Wardsville, Middlesex	48	1,424	96	15	.....	.....	.....
233. Waterdown, Wentworth	11	2,052	150	1	.....	.....	.....
234. Waterford, Norfolk	.....	7,214	206	40	.....	.....	.....
235. Waterloo, Waterloo	4,829	33,789	838	576	‖11,352	208	1,400
236. Watford, Lambton	1,728	8,272	499	55	.....	.....	.....
237. Welland, Welland	91	24,074	777	146	3,882	951	.....
238. Wellington, Prince Edward	378	2,710	150	25	.....	.....	.....
239. Weston, York	1,188	9,105	216	64	‡1,635	12	.....
240. Westport, Leeds	837	4,268	337	72	.....	.....	.....
241. Whitby, Ontario	376	23,277	570	452	¶8,962	.....	.....
242. Wiarton, Bruce	.....	22,546	444	326	3,419	359	385
243. Winchester, Dundas	.....	8,300	337	139	.....	.....	.....
244. Wingham, Huron	5,150	17,149	767	1,131	‡7,304	989	9,613
245. Woodbridge, York	1,392	2,505	110	13	.....	53	300
246. Woodville, Victoria	771	2,474	84	200	.....	14	.....
247. Wroxeter, Huron	86	2,056	92	24	.....	54	.....
248. Wyoming, Lambton	.....	4,703	316	1	.....	.....	.....

* Including $6,181 electric light rates.
† Including $9,426 electric light rates.
‡ Electric light rates.
‖ Including $4,564 electric light rates.
¶ Including $7,795 electric rates for 1903-4 and 1905.

MUNICIPALITIES, FOR THE YEAR 1905.

ASSETS AND LIABILITIES, 1905.

Receipts, 1905.—*Continued.*							Disbursements, 1905.					
Borrowed for current expenses.	Borrowed on debentures for schools.	Borrowed on debentures for other purposes.	Premiums on debentures sold.	County grants.	Miscellaneous.	Total receipts.	Allowances, salaries and commissions.	Lighting of streets, water supply and fire protection.	Law costs.	Other expenses of municipal government.	Streets, bridges and parks.	No.
$	$	$	$	$	$	$	$	$	$	$	$	
7,202	....	10,715	.....	....	212	26,150	449	663	25	187	3,785	201
6,700	21,000	.....	160	....	188	51,750	1,647	187	659	1,229	5,566	202
2,700	.....	2,500	87	34	134	12,930	237	106	16	275	1,129	203
3,410	.....	4,000	.....	....	.....	13,365	276	684	16	305	317	204
63,553	.....	.....	.....	....	1,166	101,798	1,067	8,628	.....	670	1,171	205
1,500	.....	.....	.....	....	53	5,402	322	176	.....	165	2,088	206
23,500	.....	35,000	.....	....	4	71,009	1,005	1,453	190	399	6,393	207
.....	.....	.....	.....	....	.....	638	83	.....	11	48	123	208
1,683	.....	25,078	833	....	1,275	64,094	1,062	10,515	505	1,597	6,236	209
173	.....	.....	.....	....	4	1,849	137	12	15	122	84	210
173	.....	.....	.....	....	7	4,453	156	211	5	122	343	211
.....	.....	.....	.....	....	158	5,413	262	.....	5	122	931	212
.....	.....	4,970	174	....	123	15,412	260	576	46	368	685	213
8,000	.....	12,500	.....	....	19	31,766	691	968	26	411	1,122	214
1,000	.....	.....	.....	.....	.....	3,278	86	92	.....	118	319	215
13,047	.....	1,500	.....	....	3	24,551	912	3,428	77	247	670	216
2,200	.....	.....	.....	....	53	10,256	361	164	201	266	1,476	217
12,000	.....	.....	.....	....	364	31,292	415	3,907	15	490	1,055	218
13,983	....	13,665	674	50	83	42,190	252	1,575	26	472	400	219
15,000	.....	.....	.....	270	371	46,871	819	2,360	80	1,092	2,893	220
.....	.....	.....	.....	20	5	1,921	142	.....	10	73	212	221
.....	.....	.....	.....	....	6,133	129,244	2,926	24,230	2,018	2,038	11,103	222
1,500	....	.....	.....	....	.....	6,966	149	2,470	206	276	.....	223
85,539	.....	.....	.....	....	*2,268	119,168	1,170	3,044	1,032	753	3,820	224
2,000	.....	.....	.....	....	91	16,141	304	1,446	.....	166	601	225
22,700	.....	2,388	.....	....	8	41,278	800	1,394	40	695	2,934	226
3,339	.....	8,925	.....	....	56	25,459	226	411	.....	232	5,009	227
600	.....	500	.....	400	5	4,045	137	.....	14	161	1,633	228
16,000	.....	2,313	.....	....	813	44,870	946	1,939	295	1,289	2,854	229
21,000	50,000	83,666	.....	....	84	208,542	2,269	4,437	692	1,422	10,869	230
9,600	.....	.....	.....	....	940	32,175	796	2,602	.....	337	1,977	231
200	.....	.....	.....	..	.....	1,783	101	.....	.....	51	697	232
.....	.....	.....	.....	100	27	2,341	124	10	5	130	323	233
3,500	.....	.....	.....	....	195	11,155	376	14	.....	128	1,725	234
9,900	.....	28,588	481	....	†4,080	96,041	2,304	14,707	169	1,249	14,568	235
4,325	....	.....	.....	....	61	14,940	546	836	18	237	798	236
.....	.....	993	24	....	447	31,385	1,463	3,960	350	1,092	3,081	237
1,525	.....	.....	.....	.....	.....	4,788	191	94	10	188	400	238
.....	.....	.....	.....	....	347	12,567	515	3,338	49	280	2,320	239
3,372	.....	.....	.....	....	398	9,284	548	.....	.....	178	1,611	240
84,310	.....	9,300	86	....	33	127,366	1,158	8,294	600	1,342	3,982	241
52,507	.....	10,368	49	....	57	90,460	852	4,883	65	950	761	242
5,238	.....	.....	.....	....	305	14,319	157	662	10	260	6,787	243
7,300	.....	12,000	115	....	1,030	62,548	839	4,165	27	751	1,443	244
3,450	.....	1,500	30	....	184	9,537	261	93	41	143	2,298	245
300	.....	.....	.....	....	185	4,028	113	46	.....	84	277	246
3,076	.....	4,200	.....	....	335	9,923	187	252	41	111	969	247
1,850	....	....	.....	....	162	7,032	282	208	.....	85	959	248

* Including $1,290 for boomage charges.
† Including $4,000 from A. Carnegie for Library.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS, DISBURSEMENTS,

Village and Town Municipalities.	Disbursements, 1905.—*Continued.*							
	Waterworks and electric light construction.	Buildings and other works.	Board of Health.	Support of the poor and other charities.	Administration of justice, including police services.	County Treasurer for levies.	Payment on account of schools and education.	Sinking Fund investments and deposits.
	$	$	$	$	$	$	$	$
201. Stayner	1,000	.....	28	84	20	532	2,800	.....
202. Steelton	.....	921	1,043	232	690	.....	29,358	.....
203. Stirling	.....	2,896	215	314	4	771	3,000	.....
204. Stouffville	360	.....	20	39	37	565	1,810	.....
205. Strathroy	2,025	.....	574	106	546	1,613	7,098	.....
206. Streetsville	.....	22	20	.....	45	184	1,123	.....
207. Sturgeon Falls	19,431	1,786	59	90	522	.....	3,787	.....
208. Sturgeon Point	.....	.....	86	.....	.....	32	47	.....
209. Sudbury	16,442	.....	467	247	434	.....	3,618	.....
210. Sundridge	.....	.....	10	14	15	.....	493	173
211. Sutton	.....	1,224	19	....	28	243	924	.....
212. Tara	.....	.....	13	37	6	271	1,057	.....
213. Teeswater	.....	.....	2	1	4	388	1,810	2,235
214. Thamesville	9,202	150	131	20	67	547	1,398	.....
215. Thedford	.....	53	20	1	20	175	956	.....
216. Thessalon	400	.....	25	277	240	.....	2,400	200
217. Thornbury	.....	.....	15	30	53	290	1,796	121
218. Thorold	840	.....	60	16	574	949	6,012	.....
219. Tilbury	2,865	750	10	83	462	.....	2,177	86
220. Tillsonburg	841	.....	50	172	843	1,313	6,513	4,326
221. Tiverton	.....	190	10	12	12	155	500	.....
222. Toronto Junction	3,194	.....	3,927	389	5,744	.....	36,281	.....
223. Tottenham	.....	10	3	.....	31	371	1,200	.....
224. Trenton	.....	2,261	196	604	1,506	.....	6,523	118
225. Tweed	.....	.....	34	28	162	648	2,042	.....
226. Uxbridge	.....	.....	6	53	431	903	3,600	1,297
227. Vankleek	.....	200	101	36	25	468	3,300	.....
228. Vienna	.....	.....	.....	5	7	144	750	160
229. Walkerton	354	120	177	220	823	922	6,265	793
230. Walkerville	.....	820	489	391	3,093	500	57,847	.....
231. Wallaceburg	.....	.....	710	314	962	735	8,386	.....
232. Wardsville	.....	.....	8	7	126	597	.....	.....
233. Waterdown	.....	.....	34	.....	16	375	870	.....
234. Waterford	.....	50	76	41	23	600	1,769	.....
235. Waterloo	17,054	.....	3	462	689	2,041	7,856	168
236. Watford	.....	100	11	183	23	539	3,004	.....
237. Welland	1,827	.....	24	80	513	1,057	4,843	2,967
238. Wellington	.....	.....	15	72	16	220	947	.....
239. Weston	.....	.....	30	38	111	565	2,924	.....
240. Westport	.....	.....	17	.....	16	169	1,903	.....
241. Whitby	8,754	385	.....	111	649	1,295	6,650	.....
242. Wiarton	11,549	30	133	29	429	738	5,700	1,035
243. Winchester	.....	.....	44	20	32	.....	2,100	.....
244. Wingham	11,429	.....	35	77	669	674	4,057	3,468
245. Woodbridge	.....	.....	6	11	27	204	867	.....
246. Woodville	.....	909	.....	57	23	435	1,126	.....
247. Wroxeter	.....	2,777	7	10	5	109	2,414	.....
248. Wyoming	.....	.....	45	17	.....	252	1,500	.....

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*								Assets, on December 31, 1905.			
Other investments and deposits.	School debentures redeemed.	All other debentures redeemed.	Refund of moneys borrowed for current expenses.	Interest on loans, advances and debentures.	Discount on debentures sold.	Miscellaneous.	Total disbursements.	Cash in treasury.	Taxes in arrears.	Sinking Fund investments and deposits.	No.
$	$	$	$	$	$	$	$	$	$	$	
.....	163	868	14,157	1,294	.....	145	26,150	.....	2,120	.....	201
900	.....	.....	5,000	60	.....	359	47,851	3,899	9,097	.....	202
.....	.....	164	2,700	469	.....	82	12,378	552	1,399	.....	203
.....	.....	1,057	6,128	1,225	.....	262	13,101	264	760	.....	204
130	.....	5,098	67,681	5,035	.....	356	101,798	.....	402	.....	205
.....	.....	94	.....	142	.....	165	4,546	856	1,273	.....	206
.....	368	1,044	27,891	3,744	.....	357	68,519	2,490	28,932	.....	207
.....	.....	.....	175	9	.....	4	618	20	.....	.....	208
8,072	.....	2,438	9,115	3,181	.....	152	64,081	13	4,409	.....	209
.....	.....	.....	.....	356	.....	141	1,572	277	2,409	1,527	210
.....	.....	105	173	118	.....	75	3,746	707	150	.....	211
.....	164	841	.....	556	.....	164	4,429	984	.....	.....	212
1,800	.....	221	2,500	724	.....	51	11,671	3,741	.....	5,900	213
.....	.....	612	13,000	763	779	431	30,318	1,448	494	.....	214
.....	.....	407	550	356	.....	20	3,173	105	83	.....	215
.....	.....	590	10,178	1,779	51	310	21,814	2,737	2,305	788	216
1,442	.....	433	1,700	366	.....	1,302	10,016	240	79	1,653	217
.....	.....	4,856	7,000	3,750	.....	1,326	31,265	27	8,153	.....	218
3,227	312	2,825	24,222	2,058	.....	360	42,162	28	2,401	871	219
45	.....	1,845	15,377	5,766	.....	1,378	45,713	1,158	1,183	36,147	220
.....	.....	.....	200	68	.....	93	1,677	244	981	.....	221
16,384	.....	.....	.....	16,238	.....	441	124,913	4,331	13,345	.....	222
.....	113	420	1,000	413	.....	125	6,787	179	333	.....	223
.....	.....	970	85,425	8,475	.....	*3,040	118,937	231	19,131	9,190	224
.....	375	5,000	4,500	447	.....	23	15,776	365	3,284	.....	225
10	.....	2,337	24,300	1,911	.....	484	41,195	83	2,879	166	226
.....	251	41	12,040	850	.....	933	24,123	1,336	2,156	.....	227
.....	.....	.....	400	211	.....	25	3,647	398	474	1,127	228
.....	.....	4,507	16,786	5,460	113	967	44,830	40	1,793	5,495	229
.....	820	12,129	100,358	10,198	566	1,532	208,432	110	2,399	.....	230
.....	823	4,006	3,153	5,388	.....	1,094	31,283	892	9,853	.....	231
.....	.....	.....	.....	2	.....	30	1,619	164	426	.....	232
.....	.....	.....	314	11	.....	22	2,234	107	532	.....	233
.....	408	185	4,666	586	.....	127	10,774	381	.....	.....	234
15,000	.....	6,234	.....	8,268	.....	†5,269	96,041	.....	800	1,795	235
.....	1,059	407	4,325	1,018	.....	276	13,380	1,560	41	.....	236
.....	138	2,598	624	4,905	.....	477	29,999	1,386	6,010	27,685	237
.....	.....	200	2,200	77	.....	36	4,666	122	139	.....	238
.....	328	286	.....	659	.....	109	11,552	1,015	396	.....	239
.....	.....	.....	3,372	32	.....	1,108	8,954	330	1,587	.....	240
.....	.....	2,606	82,154	6,385	.....	2,736	127,101	265	13,721	.....	241
.....	227	3,056	49,856	9,132	.....	910	90,335	125	3,709	3,173	242
.....	851	376	2,211	569	.....	240	14,319	.....	52	.....	243
4,547	.....	13,902	6,300	8,628	.....	599	61,610	938	1,130	10,139	244
300	172	.....	3,350	310	.....	25	8,108	1,429	.....	.....	245
.....	.....	122	300	150	.....	69	3,711	317	215	.....	246
.....	.....	.....	1,976	28	81	113	9,080	843	83	.....	247
.....	.....	702	2,604	180	.....	105	6,939	93	152	.....	248

* Including $2,000 paid to county.
† Including $4,835 on Library account.

STATISTICS OF ONTARIO VILLAGE AND TOWN

RECEIPTS. DISBURSEMENTS,

Assets, on December 31, 1905.—*Continued.*

Village and Town Municipalities.	All other investments and deposits.	Waterworks and electric light plant.	Other property.	Miscellaneous.	Total Assets.
	$	$	$	$	$
201. Stayner	.....	26,000	3,190	50	31,360
202. Steelton	900	.....	1,215	.....	15,111
203. Stirling	.....	.....	5,950	79	7,980
204. Stouffville	.....	25,000	4,500	.....	30,524
205. Strathroy	*1,130	62,250	12,000	6,419	82,201
206. Streetsville	.....	.....	1,695	4,191	8,015
207. Sturgeon Falls	.....	80,408	2,245	3,821	117,896
208. Sturgeon	.....	.....	866	77	963
209. Sudbury	8,072	77,000	4,200	1,278	94,972
210. Sundridge	5,100	.....	2,201	.....	11,514
211. Sutton	.....	.....	3,525	32	4,414
212. Tara	900	.....	125	.....	2,009
213. Teeswater	1,800	9,500	7,025	6,900	34,866
214. Thamesville	.....	7,500	11.000	7,113	27,555
215. Thedford	.....	.....	140	6	334
216. Thessalon	.....	28,400	5,700	47	39,977
217. Thornbury	1,442	65	1,810	.....	5,289
218. Thorold	.....	25,000	18,500	1,151	52,831
219. Tilbury	4,030	19,602	1,981	17,817	46,750
220. Tillsonburg	3,065	34,350	19,309	.....	95,212
221. Tiverton	.....	.....	2.000	54	3,279
222. Toronto Junction	16,384	214,000	40,000	520,340	808,400
223. Tottenham	.....	6,000	2,100	365	8,977
224. Trenton	.....	9,000	122,292	.....	159,844
225. Tweed	.....	.....	4,950	.....	8,599
226. Uxbridge	2,500	10,000	22 550	158	38,336
227. Vankleek Hill	.....	.....	4,800	30	8,322
228. Vienna	.....	.....	1,500	.....	3,499
229. Walkerton	13,106	48,500	29,600	402	98,936
230. Walkerville	.....	.....	11 761	193,069	207,339
231. Wallaceburg	800	.....	22,000	119	33,664
232. Wardsville	.....	.....	1,100	21	1,711
233. Waterdown	.....	.....	1,000	40	1,679
234. Waterford	.....	.....	4,000	10,211	14,592
235. Waterloo	29,765	87,800	45,425	12,237	177,822
236. Watford	200	.....	5,700	89	7,590
237. Welland	.....	59,434	22,859	31,828	149,202
238. Wellington	.....	275	750	13	1,299
239. Weston	.....	7,000	4,675	2,892	15,978
240. Westport	.....	.....	400	5	2,322
241. Whitby	.....	74,202	22,100	13,841	124,129
242. Wiarton	42,200	50,572	14,390	34,409	148,578
243. Winchester	.....	.....	8,075	957	9,084
244. Wingham	†24,244	52,730	17,600	11,010	117,791
245. Woodbridge	3,554	45	450	2,404	7,882
246. Woodville	.....	.....	4,000	85	4,617
247. Wroxeter	.....	119	8,346	350	9,741
248. Wyoming	.....	.....	450	15	710

* Omitting $1,000 rebate on Industrial mortgage.
† Omitting $6,405 written off Industrial loan mortgages since 1901.

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

ASSETS AND LIABILITIES, 1905.—*Continued.*

Liabitities on December 31, 1905.

County levy.	Local school rates.	Railway debentures.	School debentures.	Waterworks debentures.	Electric light debentures	All other debentures.	Loans for current expenses and interest.	Due Sinking Fund.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	$	$	
603	1,000	.....	1,837	21,619	.....	9,389	753	.....	60	35,261	201
.....	.....	.....	21,000	.....	.....	.....	1,700	.....	235	22,935	202
306	865	.....	.....	.....	.....	12,336	.....	.....	40	13,547	203
.....	.....	.....	.....	20,893	.....	8,020	.....	.....	.....	28,913	204
1,730	.....	.....	.....	56,853	.....	35,326	3,653	.....	1,768	99,330	205
.....	858	.....	.....	.....	.....	2,703	1,500	.....	.....	5,061	206
.....	6,547	.....	8,329	37,003	.....	39,337	23,500	.....	953	115,669	207
.....	.....	.....	.....	.....	.....	.....	125	.....	42	167	208
.....	4,771	.....	.....	23,586	31,899	16,322	5,302	1,381	2,118	85,379	209
.....	934	.....	.....	.....	.....	5,100	1,645	1,527	200	9,406	210
.....	.....	.....	.....	.....	.....	2,794	.....	.....	87	2,881	211
.....	.....	.....	3,109	.....	.....	9,285	.....	.....	.....	12,394	212
.....	.....	.....	.....	10,550	.....	8,525	.....	.....	.....	19,075	213
.....	1,800	.....	.....	.....	6,384	7,486	.....	.....	412	16,082	214
.....	.....	.....	.....	.....	.....	7,030	450	.....	.....	7,480	215
.....	.....	.....	.....	14,018	12,261	3,428	4,947	.....	.....	34,654	216
.....	35	.....	.....	.....	.....	6,305	500	.....	179	7,019	217
1,042	2,831	.....	.....	.....	4,523	33,697	10,000	.....	924	53,017	218
246	8	.....	1,670	12,523	3,165	16,049	2,207	613	511	36,992	219
.....	.....	6,199	15,500	.....	.....	100,644	.....	.....	300	122,643	220
.....	.....	.....	.....	.....	.....	.....	600	.....	.....	600	221
.....	17,605	.....	.....	.....	.....	1,062,650	.....	.....	6,554	1,086,809	222
.....	.....	.....	1,116	5,371	.....	1,037	520	.....	341	8,385	223
.....	2,737	.....	.....	.....	.....	160,603	11,000	.....	5,378	179,718	224
671	4,230	.....	8,085	.....	.....	.....	.....	.....	49	13,035	225
.....	.....	9,000	5,000	.....	.....	18,911	2,000	.....	368	35,279	226
.....	2,894	.....	9,726	.....	.....	10,159	2,646	.....	2,848	28,273	227
.....	226	3,000	.....	.....	.....	1,600	200	.....	12	5,038	228
.....	.....	.....	4,300	40,601	.....	73,506	.....	1,549	357	120,313	229
.....	1,858	.....	49,180	.....	.....	154,266	.....	.....	994	206,298	230
735	744	.....	1,802	.....	.....	99,744	15,200	.....	.....	118,225	231
130	.....	.....	.....	.....	.....	.....	591	.....	67	788	232
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	233
.....	1,571	.....	4,717	.....	.....	1,304	.....	.....	.....	7,592	234
.....	.....	.....	.....	58,761	.....	144,477	9,900	565	10,491	224,194	235
.....	.....	.....	6,816	.....	.....	12,834	.....	.....	.....	19,650	236
.....	2,300	.....	13,863	49,087	.....	36,539	.....	.....	.....	101,789	237
.....	100	.....	.....	.....	.....	600	125	.....	.....	825	238
.....	1,116	.....	7,427	.....	5,442	.....	.....	.....	3,272	17,257	239
169	757	.....	.....	.....	.....	.....	.....	.....	1,042	1,968	240
.....	.....	.....	.....	.....	62,636	64,306	25,732	.....	4,214	156,888	241
856	.....	.....	11,278	43,632	.....	104,097	23,703	.....	.....	183,566	242
287	.....	.....	3,839	.....	.....	4,346	4,074	.....	.....	12,546	243
674	.....	8,000	.....	19,500	28,909	79,319	1,000	.....	6,302	143,704	244
.....	.....	.....	5,503	.....	.....	1,500	2,854	.....	172	10,029	245
.....	.....	.....	.....	.....	.....	3,260	.....	.....	100	3,360	246
152	.....	.....	.....	.....	.....	4,200	1,100	.....	80	5,532	247
.....	.....	.....	.....	.....	.....	1,851	.....	.....	.....	1,851	248

STATISTICS OF ONTARIO CITY

City Municipalities and Counties in which located.	Receipts and Disbursements, 1905. Balance from 1904.	Municipal and School taxes.	Liquor licenses.	Other licenses.	Fees, rents, tolls, fines, etc.	Water rates, electric light, etc.	Interest and dividends.	From Government, except for loans and schools.
	$	$	$	$	$	$	$	$
Belleville (Hastings)	91	93,330	* 2,225	1,321	2,994	36,976	3,135	.....
Brantford (Brant)	300	185,017	2,682	2,891	5,284	40,865	14,648	.....
Chatham (Kent)	2,713	133,146	4,114	866	4,553	17,764	1,613	.....
Guelph (Wellington)	7,893	107,215	2,135	848	42,267	*73,185	14,034	.....
Hamilton (Wentworth)	8,163	629,963	9,668	5,595	52,858	209,347	17,476	4,995
Kingston (Frontenac)	24,361	171,632	6,300	1,443	5,322	101,265	7,533	3,187
London (Middlesex)	673	494,184	2,212	3,909	30,905	94,896	20,161	89
Niagara Falls (Welland)	.....	86,015	1,280	1,177	2,646	*[2]35,329	2,028	.....
Ottawa (Carleton)	88,464	810,529	14,214	7,342	34,913	*[3]171,167	127,132	.....
Peterborough (Peterborough	.....	112,284	4,247	1,735	8,458	28,903	4,709	.....
St. Catharines (Lincoln)	36,013	119,144	2,142	759	5,142	28,689	5,364	250
St. Thomas (Elgin)	3,501	143,154	1,310	1,101	18,673	‖69,669	1,382	.....
Stratford (Perth)	1,873	108,547	2,284	781	1,641	18,047	8,885	.....
Toronto (York)	331,397	3,391,934	31,173	42,251	¶672,426	445,507	186,757	30,728
Windsor (Essex)	3,145	199,016	2,593	1,067	4,971	43,885	12,065	.....
Woodstock (Oxford)	1,921	82,424	1,735	1,067	2,383	44,712	8,803	.....
Totals :								
1905	510,508	6,867,534	90,314	74,153	895,436	1,460,206	435,725	39,249
1904	†394,702	6,487,387	86,662	68,535	745,382	1,230,667	445,825	42,186
1903	753,784	6,222,139	92,181	71,776	645,509	1,118,953	373,859	44,471
1902	356,425	6,195,164	93,115	55,981	621,770	1,127,390	406,040	12,502
1901	225,906	5,760,508	91,927	53,438	578,242	1,007,060	364,549	15,406
1900	526,712	5,600,710	93,147	50,418	472,885	980,039	381,481	16,228
1899	‡833,413	5,280,927	95,795	50,360	434,335	1,092,419	369,007	19,162
1898	589,891	5,078,809	91,275	47,214	408,888	1,040,392	354,162	17,053
1897	§715,390	4,966,002	95,449	41,754	391,691	1,028,673	309,612	18,638
1896	543,686	5,088,215	92,222	39,186	410,453	1,008,129	285,883	20,388

* Including $52,487 from gas, electric light and power rates. *[2]Including $19,777 from electric light rates.
*[3]Including $12,159 from gas, electric light and power rates.
‖ Including $36,145 from gas, electric light and power rates.
¶ Including $222,518 Property rentals, and $373,647 street railway revenue.
† Aggregate of balances at close of 1903, of former town of Niagara Falls and village of Niagara Falls South, brought forward.
‡ Including $18,749 from former town of Woodstock.
§ Including $599 from former village of London West at time of amalgamation with City of London.

MUNICIPALITIES, FOR THE YEAR 1905.

Receipts and Disbursements, 1905.—*Continued.*

Refund from Sinking Fund and other investments.	Money borrowed for current expenses.	Money borrowed on debentures.		Miscellaneous.	Total receipts.	City Municipalities.
		For School purposes.	For all other purposes.			
$	$	$	$	$	$	
26,365	48,698	.....	34,596	4,485	254,216	Belleville,
47,434	9,000	5,000	106,541	5,154	424,816	Brantford.
5,643	190,547	.....	114,404	*26,711	502,074	Chatham.
18,264	20,000	31,000	155,100	15,014	486,955	Guelph.
62,044	226,813	.....	321,136	108,334	1,656,392	Hamilton.
12,489	82,435	2,000	116,632	5,862	540,461	Kingston.
432,033	527,800	.....	166,410	4,385	1,777,657	London.
7,219	187,545	.....	39,769	26,078	389,086	Niagara Falls.
17,503	242,848	88,000	552,678	†57,793	2,212,583	Ottawa.
4,536	47,870	3,000	31,000	12,640	259,382	Peterborough.
69,475	58,238	.....	62,604	7,455	395,275	St. Catharines.
32,801	463,000	.....	281,609	‡40,568	1,056,768	St. Thomas.
.....	207,616	15,500	60,000	8,266	433,440	Stratford.
1,373,150	406,870	27,759	1,677,251	213,076	8,830,279	Toronto.
19,461	177,582	.....	170,878	4,962	639,625	Windsor.
31,217	144,864	.....	63,687	15,291	398,104	Woodstock.
						Totals :
2,159,634	3,041,726	172,259	3,954,295	556,074	20,257,113	1905.
4,300,580	3,201,866	252,579	4,508,045	519,982	22,284,398	1904.
1,619,953	3,562,737	107,700	2,237,364	365,009	17,215,435	1903.
1,742,681	3,029,164	332,200	1,089,211	406,009	15,467,652	1902.
1,873,929	2,157,713	52,300	2,659,829	364,913	15,205,720	1901.
984,291	2,968,425	50,500	1,366,738	174,930	13,666,504	1900.
2,260,598	2,376,181	10,000	2,230,022	228,601	15,280,820	1899.
1,599,386	2,215,732	233,046	2,769,823	335,039	14 780,710	1898.
1,662,182	1,849,188	50,000	2,462,888	299,766	13,891,233	1897.
916,784	1,377,426	135,500	2,892,152	336,975	13,146,999	1896.

* Including $17,000 return of bonus from P. Marquette Ry. Co.
† Including $40,000 donation from A. Carnegie for Public Library.
‡ Including $27,000 donation from A. Carnegie for Public Library.

STATISTICS OF ONTARIO CITY

City Municipalities.	Receipts and Disbursements, 1905.—*Continued.*							
	Allowances, salaries and commissions.	Printing, advertising, postage and stationery.	Insurance, heating and lighting of buildings.	Law costs (including salaries).	Lighting of streets.	Water supply and fire protection.	Election of members of council.	Other expenses of municipal government.
	$	$	$	$	$	$	$	$
Belleville (Hastings)	3,087	829	1,841	200	*17,896	15,248	146	2,649
Brantford (Brant)	7,857	1,833	1,510	1,225	9,959	31,916	1,041	2,726
Chatham (Kent)	4,995	1,048	1,334	1,630	6,759	21,932	505	1,499
Guelph (Wellington)	3,850	1,412	3,471	4,489	5,915	32,062	277	†60,094
Hamilton (Wentworth)	33,658	3,711	5,082	6,918	38,773	108,421	1,034	13,333
Kingston (Frontenac)	11,886	1,004	3,947	291	7,956	24,279	1,013	†42,919
London (Middlesex)	19,569	3,740	7,652	3,529	26,373	58,982	1,611	4,065
Niagara Falls (Welland)	5,796	753	3,367	703	15,348	15,130	107	4,313
Ottawa (Carleton)	22,304	5,986	9,491	3,149	34,155	122,390	2,898	†32,738
Peterborough. (Peterborough)	5,257	1,063	4,147	1,046	7,285	22,353	623	316
St. Catharines (Lincoln)	5,142	1,706	1,442	700	8,151	18,083	565	1,414
St. Thomas (Elgin)	6,540	1,471	4,218	583	6,148	22,132	274	†43,120
Stratford (Perth)	3,864	1,305	2,663	846	5,329	23,022	177	741
Toronto (York)	141,934	16,837	82,427	39,284	124,083	483,343	7,488	40,100
Windsor (Essex)	10,282	1,221	3,732	1,262	9,108	36,711	468	1,441
Woodstock (Oxford)	3,120	1,078	1,188	254	4,915	31,718	125	†17,004
Totals:								
1905	289,141	44,997	137,512	66,109	328,153	1,067,722	18,352	268,472
1904	262,722	37,148	103,886	85,256	329,981	1,091,089	17,106	95,782
1903	250,343	31,297	129,689	50,784	285,902	1,036,490	11,513	88,584
1902	241,506	32,862	84,708	59,275	281,227	922,029	11,582	51,881
1901	233,575	33,981	67,667	61,665	276,235	875,134	10,898	167,202
1900	225,453	37,267	57,789	54,672	255,806	839,160	11,651	125,152
1899	234,906	33,818	55,795	48,563	239,666	736,012	9,865	98,912
1898	188,219	37,406	46,892	54,270	251,379	828,061	11,743	89,402
1897	192,948	35,998	46,074	65,056	245,456	720,294	10,057	68,128
1896	199,288	31,346	30,175	62,468	254,797	716,095	13,298	111,696

* Including $13,852 cost of operating gas light plant.

† Including cost of operating Public Utilities, for which those cities have expended in 1905, as follows: *Guelph*, Radial Ry., $22,703, gas, electric light and power, $37,223; *Kingston*, gas, electric light and power, $42,678; *Ottawa*, electric light and power, $25,891; *St. Thomas*, Street ry., gas, electric light and power, $40,102: *Woodstock*, electric light and power, $16,545.

MUNICIPALITIES, FOR THE YEAR 1905.

Receipts and Disbursements, 1905.—*Continued*

Streets, bridges and parks.	Construction of waterworks, sewers and electric light.	Buildings and other property	Board of Health (including salaries).	Support of the poor and other charities.	Administration of justice, police service, etc.	Payments on schools and education.	Sinking Fund investments and deposits.	City Municipalities.
$	$	$	$	$	$	$	$	
20,313	20,006	.....	349	2,484	7,275	17,918	36,551	Belleville.
34,811	42,590	*11,356	5,854	8,146	13,246	51,211	60,738	Brantford.
109,242	4,123	*²16,157	1,207	2,355	6,991	39,659	.....	Chatham.
9,474	26,019	*³137,381	1,061	4,439	9,462	51,095	24,730	Guelph.
248,608	101,053	19,597	33,413	70,974	74,065	135,833	112,840	Hamilton.
37,351	47,049	.....	875	3,595	15,173	43,676	21,878	Kingston.
194,990	50,240	8,147	2,903	32,573	50,101	126,075	358,924	London.
39,569	109,754	166	1,568	2,485	6,600	17,960	.....	Niagara Falls.
255,298	223,482	33,715	17,546	15,461	67,688	358,102	263,308	Ottawa.
35,634	45,400	‡30,629	796	2,463	8,403	42,213	18,544	Peterborough.
26,643	68,768	4,500	986	2,441	6,287	24,227	42,977	St. Catharines.
33,863	241,571	‖44,200	1,196	4,856	8,079	35,249	.....	St. Thomas.
147,268	42,962	.....	398	1,712	5,595	42,729	22,652	Stratford.
†1,543,227	492,599	249,712	61,616	107,840	499,463	892,196	1,712,758	Toronto.
43,616	4,571	150	2,551	3,266	10,035	43,080	18,010	Windsor.
26,237	30,218	300	494	1,046	3,785	19,901	37,066	Woodstock.
								Totals :
2,806,144	1,550,405	556,010	132,813	266,136	792,248	1,941,124	2,730,976	1905.
2,423,664	930,406	288,548	128,843	222,197	741,010	1,595,416	3,879,170	1904.
2,168,739	586,935	335,568	96,850	223,183	699,101	1,514,205	1,964,730	1903.
1,875,465	368,266	275,511	111,026	213,281	671,303	1,471,887	1,652,990	1902.
1,688,698	402,998	196,787	105,402	188,651	621,219	1,300,982	1,691,603	1901.
1,884,182	644,059	197,132	71,332	199,077	560,397	1,430,853	956,990	1900.
1,618,975	561,181	376,477	72,770	183,319	550,702	1,130,466	2,363,835	1899.
1,261,798	334,439	467,118	67,205	175,233	526,198	1,258,986	2,154,395	1898.
1,398,771	373,916	555,481	68,145	175,327	508,054	1,068,928	2,079,598	1897.
830,892	354,112	527,074	63,648	157,318	508,610	1,141,815	1,543,124	1896.

* Including cost of Fire Department appliances, *² Including $15,273 for new market, *³ Including $78,000 for Radial railway and $59,230 for gas, electric light and power plant.
† Including scavenging, $132,364, and street and snow cleaning, $136,729. ‡ Armouries, etc.
‖ Including $13,972 on street railway capital account and $26,701 for Library building.

STATISTICS OF ONTARIO CITY

Receipts and Disbursements, 1905.—*Continued.*

City Municipalities.	Other investments and special deposits.	Debentures redeemed.		Interest or discount on loans, etc.	Refund of money borrowed for current expenses.	Discount on debentures sold.
		Principal.	Interest			
	$	$	$	$	$	$
Belleville (Hastings)	2,397	6,362	29,949	821	59,880	.....
Brantford (Brant)	6,490	3,283	49,092	1,495	15,000	446
Chatham (Kent)	5,289	34,053	33,766	3,407	196,547	.....
Guelph (Wellington)	*14,377	16,499	38,211	1,507	25,000	.....
Hamilton (Wentworth)	.....	131,213	172,491	9,450	238,347	274
Kingston (Frontenac)	7,263	26,668	48,314	10,448	145,000	297
London (Middlesex)	120,605	60,194	106,225	888	485,127	116
Niagara Falls (Welland)	16,274	16,561	15,753	5,275	102,002	.....
Ottawa (Carleton)	5,725	20,602	224,361	91,059	352,999	.....
Peterborough (Peterborough)	.....	....	28,278	1,550	1,177	.....
St. Catharines (Lincoln)	41,165	8,000	45,306	1,389	54,342	192
St. Thomas (Elgin)	20,411	81,749	33,489	4,397	429,000	.....
Stratford (Perth)	4,211	1,908	28,734	5,015	82,616	.....
Toronto (York)	215,851	392,333	835,944	45,074	337,250	38,433
Windsor (Essex)	9,418	55,845	43,983	10,900	318,386	166
Woodstock (Oxford)	13,201	42,363	27,671	1,484	110,500	.....
Totals:						
1905	482,677	897,633	1,761,567	194,159	2,953,173	39,924
1904	431,124	2,485,099	1,750,921	137,406	4,174,952	215,561
1903	706,763	1,019,251	1,620,111	141,021	3,475,278	31,808
1902	342,075	1,228,023	1,692,081	147,947	2,470,407	15,857
1901	375,529	1,397,301	1,723,303	104,477	2,769,429	37,984
1900	423,302	1,421,313	1,675,963	122,179	1,911,685	6,856
1899	250,104	1,194,529	1,622,380	115,814	2,990,049	9,283
1898	157,870	2,342,718	1,593,108	107,346	1,705,883	5,010
1897	122,431	2,176 917	1,632,664	99,369	1,250,683	3,625
1896	252,250	2,009,335	1,625,955	92,125	1,336,975	30,219

* Being $8,200 balance at credit of Light and Power account, and $6,177 balance at credit of Radial railway account.

MUNICIPALITIES, FOR THE YEAR 1905.—*Continued.*

Disbursements.—*Concluded.*			Assets on December 31, 1905.				
Library.	Miscellaneous.	Total disbursements.	Cash in treasury (exclusive of S. Fund.)	Taxes in arrears.	Sinking Fund investments and deposits.	Other investments and special deposits.	City Municipalities.
$	$	$	$	$	$	$	
1,000	2,586	249,787	1,429	60,992	118,513	32,822	Belleville.
3,750	*58,899	424,474	342	2,871	330,163	81,787	Brantford.
1,397	5,729	499,624	2,450	41,313	.....	18,489	Chatham.
2,245	11,759	484,829	2,126	19,442	155,450	*212,377	Guelph.
10,557	78,062	1,647,707	8,685	259,870	522,848	129,286	Hamilton.
400	7,733	509,015	31,446	8,684	81,974	29,163	Kingston.
7,774	7,389	1,737,792	39,865	38,393	482,842	1,037,445	London.
972	8,630	389,086	.....	20,003	.....	16,274	Niagara Falls.
8,099	6,509	2,177,065	35,518	154,321	2,450,606	5,725	Ottawa.
.....	2,205	259,382	.....	6,540	†97,569	‡27,200	Peterborough.
5,116	23,472	393,014	2,261	14,197	88,200	50,626	St. Catharines.
2,064	*24,473	1,049,083	7,685	25,485	30,000	20,411	St. Thomas.
1,200	8,302	433,249	191	28,500	172,512	4,211	Stratford.
33,735	75,843	8,469,370	360,909	849,321	6,590,129	31,588	Toronto.
3,243	8,004	639,449	176	48,272	195,421	9,612	Windsor.
1,619	10,284	385,571	12,533	6,000	204,572	19,944	Woodstock.
							Totals :
83,171	339,879	19,748,197	508,616	1,584,204	†11,520,799	‡1,756,960	1905.
90,177	256,426	21,773,890	510,508	1,599,314	10,415,318	1,702,661	1904.
68,839	298,677	16,835,661	379,774	1,677,817	10,142,343	1,976,122	1903.
70,705	418,974	14,713,868	753,784	1,807,924	9,269,095	1,797,830	1902.
57,460	461,115	14,849,295	356,425	2,144,879	9,009,740	1,804,801	1901.
57,025	271,297	13,440,598	225,906	2,172,564	8,729,769	1,915,869	1900.
56,576	200,111	14,754,108	526,712	2,087,251	¶8,560,436	§1,800,206	1899.
55,775	245,592	13,966,046	824,664	2,194,723	8,072,637	1,777,478	1898.
57,666	345,756	13,301,342	589,891	2,205,219	7,381,842	1,785,394	1897.
57,047	482,546	12,432,208	714,791	1,992,178	6,831,025	1,833,607	1896.

* Including $54,500 Bonus to G.T. Railway. *2 Omitting $5,000 written off loans on industrial mortgages.
*3 Including $20,000 bonus to Railway.
† Including $82,361 brought forward from account of former town of Peterborough as at December 31, 1904.
‡ Including $28,400 brought forward from account of former town of Peterborough as at December 31, 1904.
¶ Including $115,777 from former town of Woodstock.
§ Including $11,409 from former town of Woodstock.
Including 1,061 from former village of London West, united with London City in 1897.

STATISTICS OF ONTARIO CITY

City Municipalities.	Assets on December 31st, 1905.—*Concluded.*					Liabilities	
	Land, buildings, library, etc.	Waterworks and electric light plant.	Other property, (cemetery, fire-halls, etc.)	Miscellaneous.	Total assets.	Local school rates unpaid.	Debentures: Aid to railways.
	$	$	$	$	$	$	$
Belleville (Hastings)	94,191	281,798	.....	129,907	722,652	.....	.....
Brantford (Brant)	338,560	394,506	28,163	228,553	1,404,945	.....	*107,000
Chatham (Kent)	115,098	235,195	45,000	465,130	952,675	.....	.....
Guelph (Wellington)	171,978	365,332	‡52,067	¶236,966	1,215,738	1,700	193,000
Hamilton (Wentworth)	931,011	2,141,315	‖898,052	691,059	5,582,126	.....	250,000
Kingston (Frontenac)	245,578	511,500	32,762	57,735	998,842	1,500	57,656
London (Middlesex)	536,500	868,417	18,750	45,916	3,068,128	3,310	325,000
Niagara Falls (Welland)	29,400	251,680	30,050	159,657	507,064	.....	.....
Ottawa (Carleton)	683,000	2,350,000	154,000	1,008,300	6,841,470	.....	370,000
Peterborough (Peterborough)	183,026	292,000	9,100	194,370	809,805	.....	.....
St. Catharines (Lincoln)	135,618	398,940	45,730	100,778	836,350	.....	61,320
St. Thomas (Elgin)	289,175	494,375	11,800	205,069	1,084,000	.....	20,000
Stratford (Perth)	119,250	150,000	§76,500	158,962	710,126	.....	60,000
Toronto (York)	10,285,000	5,000,000	400,000	2,727,978	26,244,925	.....	1,143,718
Windsor (Essex)	141,157	302,000	18,500	188,098	903,236	1,381	.....
Woodstock (Oxford)	69,810	243,094	15,300	54,389	625,642	.....	.....
Totals:							
1905	14,368,352	14,280,152	1,835,774	6,652,867	52,507.724	7,891	*2,587,694
1904	13,895,019	13,152,576	1,756,841	5,593,184	48,625,421	1,089	†2,462,112
1903	13,315,317	11,829,216	1,581,713	5,720,204	46,622,506	5,122	2,463,468
1902	13,280,209	11,604,891	1,545,532	4,859,218	44,918,483	9,151	2,464,767
1901	13,225,204	11,412,835	1,506,473	4,093,443	43,553,800	6,036	2,466,009
1900	13,184,319	11,257,342	1,539,274	3,948,867	42,973,910	30,543	2,356,533
1899	12,997,730	10,923,162	1,517,122	3,956,453	42,369,072	12,125	2,399,202
1898	12,699,496	10,550,642	1,506,685	3,902,440	41,518,765	24,129	2,431,057
1897	12,447,827	10,481,486	1,461,036	3,673,267	40,025,962	9,368	2,443,600
1896	12,370,784	10,421,768	1,389,534	4,016,053	39,569,740	16,562	2,492,981

* See corresponding note on next page.
† See corresponding note on next page.
‡ Including $12,567 for sewage disposal system.
‖ Including $823,904 for sewage disposal system.
¶ Including $108,000 in Radial Ry. stock.
§ Including $50,000 for sewage disposal system.

MUNICIPALITIES, FOR THE YEAR 1905.—*Concluded.*

on December 31st, 1905.

outstanding, principal.

Schools.	Local improvements.	Municipal works.	All other objects.	Loans for current expenses.	Miscellaneous.	Total liabilities.	City, Municipalities.
$	$	$	$	$	$	$	
8,500	52,995	255,321	476,000	71,870	8,766	873,452	Belleville.
85,073	223,084	387,000	500,833	9,000	8,921	1,320,911	Brantford.
.....	365,870	148,813	343,832	127,000	8,283	993,798	Chatham.
64,793	128,358	254,915	402,525	38,000	35,546	1,118,867	Guelph.
201,784	513,882	1,100,124	2,378,569	226,813	63,263	4,734,435	Hamilton.
48,800	188,821	439,725	415,950	58,026	20,004	1,230,482	Kingston.
100,100	571,992	818,629	1,386,126	52,800	85,261	3,343,218	London.
25,297	100,510	152,163	106,090	186,484	20,276	590,820	Niagara Falls.
445,500	1,036,583	1,627,251	3,265,705	§273,281	§145,000	7,163,320	Ottawa.
64,900	148,057	277,000	201,200	73,463	2,031	766,651	Peterborough.
5,000	97,344	70,000	§870,440	34,147	19,631	1,157,882	St. Catharines.
101,900	183,322	349,886	¶221,765	79,000	8,410	964,283	St. Thomas.
36,000	117,564	144,976	376,000	159,000	12,357	905,897	Stratford.
028,867	7,078,301	5,089,013	9,127,017	406,870	3,519,551	28,393,337	Toronto.
155,327	355,073	132,435	309,317	40,000	8,999	1,002,532	Windsor.
28,700	116,473	187,472	267,619	78,474	2,147	680,885	Woodstock.
							Totals :
*3,400,541	*11,278,229	*11,434,753	*20,648,988	*1,914,228	3,968,446	55,240,770	1905.
†3,216,767	†10,043,376	†10,489,567	†19,254,367	†1,813,452	2,891,653	50,172,383	1904.
2,979,062	9,470,413	8,932,511	19,017,346	2,705,602	1,670,419	47,243,946	1903.
2,908,414	8,904,149	8,941,372	18,318,288	2,622,210	1,523,619	45,691,970	1902.
2,661,742	9,239,055	8,656,693	18,313,517	2,080,810	1,548,273	44,972,135	1901.
2,599,438	8,695,233	8,405,502	17,965,483	2,693,978	1,641,886	44,388,596	1900.
‡2,596,676	‡9,499,774	‡8,327,975	‡17,202,637	1,607,923	1,594,357	43,240,669	1899.
2,557,843	9,748,620	7,487,622	16,281,386	2,212,098	1,602,554	42,345,309	1898.
2,410,542	9,663,424	7,807,042	15,521,769	1,709,406	1,607,280	41,172,431	1897.
2,392,624	10,308,596	7,676,351	14,600,678	1,110,364	1,919,232	40,517,388	1896.

* Including the balances of these accounts brought forward from former town of Peterborough as at December 31st, 1904. See Summary Table of Towns, page 108.

† Including the aggregate balances of each of the acc'ts brought forward from the former municipalities of the town of Niagara Falls and the village of Niagara Falls, South, now comprising the city as at Dec. 31, 1903.

‡ These items include an aggregate of $474,243 from former town of Woodstock, being school debentures, $60,525; Local improvement, $53,877; Water Works, $141,789; all other objects, $218,452.

Including $59,176 assumed by city of London from village of London West at time of amalgamation.

§ Including $275,000 waterworks debentures consolidated.

¶ Omitting $2,062 overstated in 1904.

STATISTICS OF ONTARIO

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

County Municipalities.	Receipts, 1905.						
	Balance from 1904.	Rates from local municipalities.	Licenses.	Fees, rents, tolls, Fines, etc.	Surplus fees from Registrar.	Interest and dividends.	From Legislature for schools.
	$	$	$	$	$	$	$
1. Brant	9,572	14,611	150	295	69	119	1,830
2. Bruce	4,583	40,748	1,439	194	1,941	49	4,802
3. Carleton		22,568	277	580	187	1,056	4,123
4. Dufferin	908	15,763	271	183	105	60	1,928
5. Elgin	1,410	40,252	454	452	70	231	6,257
6. Essex		34,850	170	316	1,754		3,218
7. Frontenac	235	32,574	70	2,318		401	3,604
8. Grey		41,384	1,488	111	832	991	5,748
9. Haldimand	28	29,072	150	36	28		2,437
10. Haliburton	163	4,043	67	121		3	4,340
11. Halton	4,804	13,536	179	7		26	1,448
12. Hastings	24	42,329	311	142	941	488	4,569
13. Huron	752	50,060	1,084	47	1,217	2,126	5,444
14. Kent	290	39,499	685	229	1,120	208	5,014
15. Lambton	15,688	53,255	140	31	1,195	448	4,501
16. Lanark		33,911	205	49			3,054
17. Leeds and Grenville	409	41,889	890	79	124	836	4,305
18. Lennox and Addington	8,728	18,603	342	228		119	2,624
19. Lincoln	2,934	26,385	220	12	565	41	1,948
20. Middlesex		84,629	614	221	216	6,198	5,366
21. Norfolk		27,309	478	117		26	2,599
22. Northumberland & Dur.	4,192	52,120	780	17	19	696	4,770
23. Ontario	17,832	34,648	531	32	173		3,888
24. Oxford	52,146	44,821	780	80	749	1,239	3,840
25. Peel	1,120	23,145	231	47			1,981
26. Perth	6,284	48,204	862	78	200	2,535	3,472
27. Peterborough	29	28,055	410	101	438	865	3,030
28. Prescott and Russell		15,198	540	30		380	2,033
29. Prince Edward	923	11,521	140	183		1	1,687
30. Renfrew	682	19,529	705	199	350	852	5,773
31. Simcoe	2,439	68,606	1,090	161	2,216	35	7,162
32. Stormont, Dun. & Glen.	8,003	33,137	1,338	193	13		6,004
33. Victoria	701	38,506	967	484	154	9	3,425
34. Waterloo	1	37,264	240	68	954		2,447
35. Welland	454	26,178	166	8	1,075	54	2,012
36. Wellington	17,399	45,308	234	146	77	149	3,709
37. Wentworth	46,491	47,397	160	771	1,110	829	2,979
38. York	13,270	39,554	403	845	680	79	5,093
Totals :							
1905	222,494	1,320,461	19,261	9,211	18,572	21,149	142,464
1904	292,195	1,180,799	19,103	7,735	16,795	15,892	138,341
1903	244,271	1,115,242	15,613	7,596	17,929	15,002	141,129
1902	190,104	1,114,766	15,102	9,020	14,520	12,505	137,792
1901	192,995	1,060,743	15,456	10,132	12,614	10,808	144,370
1900	220,596	1,099,357	15,206	12,305	16,131	13,241	142,954
1899	179,638	1,110,356	14,971	11,666	11,716	12,469	149,361
1898	227,866	1,047,924	14,227	11,573	10,957	17,475	147,418
1897	222,663	1,097,689	12,378	12,454	13,292	16,101	149,606
1896	221,381	1,111,043	12,357	24,939	16,951	34,058	142,717

COUNTY MUNICIPALITIES.

of the County Municipalities for the year ending December 31st, 1905.

Receipts, 1905.—*Continued.*								Disbursements, 1905.		
From Legislature for administration of justice.	Refund of moneys loaned or invested.	Money borrowed for current expenses.	Money borrowed on debentures.	Non-resident taxes collected.	Towns or cities separated from county for various services.	Miscellaneous.	Total receipts.	Attendance at meetings of council and committees.	Allowances, salaries and commissions.	No.
$	$	$	$	$	$	$	$	$	$	
3,168	.....	.....	.....	121	3,456	25	33,416	544	1,485	1
1,565	.....	23,000	10,000	1,938	.....	1,495	91,754	1,361	2,645	2
6,638	.....	68,227	.....	2,668	11,994	2,799	121,117	1,226	2,030	3
1,026	.....	6,500	.....	774	.....	14	27,532	380	1,418	4
4,277	.....	41,000	.....	620	887	1,041	96,951	1,572	2,609	5
6,099	.....	23,569	.....	2,500	49	1,584	74,109	811	2,234	6
5,778	.....	41,252	.....	1,093	1,599	177	89,101	2,134	2,000	7
3,261	.....	.....	15,000	1,218	.....	* 4,549	74,582	1,543	2,188	8
2,058	.....	2,262	.....	.....	.....	140	36,211	1,545	1,847	9
.....	.....	500	.....	398	.....	96	9,731	250	657	10
2,122	.....	.....	.....	149	.....	50	22,321	305	1,134	11
5,598	.....	40,215	20,000	2,339	5,199	† 8,850	131,005	1,495	3,035	12
2,312	4,405	85,000	20,000	203	.....	1,075	173,725	1,465	4,059	13
4,843	.....	28,448	.....	1,203	2,827	1,980	86,346	1,473	2,253	14
3,234	.....	15,000	.....	3,295	.....	569	97,356	904	2,254	15
1,543	2,596	14,000	7,800	936	.....	‡ 19,586	83,680	755	1,956	16
6,000	.....	.....	.....	891	3,479	1,126	60,028	1,283	2,290	17
1,914	.....	.....	.....	78	.....	77	32,713	852	970	18
3,269	.....	19,000	.....	414	3,213	4,522	62,523	1,196	1,420	19
6,336	13,000	28,367	13,000	624	10,339	633	169,543	1,464	3,874	20
1,488	.....	.....	.....	462	.....	737	33,216	671	1,300	21
2,205	.....	22,000	20,000	216	.....	519	107,534	3,302	2,344	22
3,548	.....	96,000	.....	580	.....	1,543	158,775	854	1,850	23
3,516	.....	.....	.....	249	2,399	3,879	113,698	1,659	3,588	24
2,157	.....	16,500	.....	107	.....	191	45,479	490	1,305	25
2 935	39,818	36,500	.....	99	1,709	2,747	145,473	753	1,670	26
3,027	1,060	7,790	.....	1,849	199	741	47,594	1,201	1,680	27
2,155	.....	977	.....	3,137	.....	220	24,670	930	973	28
858	.....	15,927	16,000	21	.....	.....	47,261	475	1,200	29
2,985	.....	15,000	15,000	206	.....	97	61,378	1,249	1,639	30
6,703	.....	55,000	.....	1,173	.....	‖ 39,214	183,799	2,481	3,845	31
3,269	.....	10,000	.....	838	.....	.....	62,795	1,566	1,820	32
1,979	.....	39,000	.....	566	¶ 550	6,300	92,641	1,623	2,156	33
2,718	.....	29,699	.....	17	.....	§ 5,145	78,583	1,361	1,502	34
2,691	.....	5,000	.....	1,896	2,446	1,700	43,680	1,086	1,198	35
2,693	.....	30,000	.....	114	3,614	4,359	107,802	863	2,080	36
4,642	.....	.....	.....	231	7,249	764	112 623	2,497	3,775	37
1,588	.....	6,917	.....	366	2,951	2,941	74,687	2,907	2,580	38
122,228	60,909	822,650	136,800	33,589	64,159	121,485	3,115,432	48,526	78,863	
131,922	62,859	837,834	225,033	28,120	74,557	148.046	3.179,231	54,358	73,783	
90,283	15,207	706,380	305,145	32,525	68,729	120,145	2,895,196	47,504	75,228	
127,786	56,723	536,480	149,067	34,604	93,019	51,805	2,543,293	42,768	73,516	
122,330	77,760	487,297	62,039	36,861	90,186	51,538	2,375,129	41,407	75,982	
138,685	68,399	472,430	77,491	42,540	89,919	63,286	2,472,531	39,616	78,454	
133.845	55,406	437,272	92,638	55,524	81,535	68,361	2,414,758	44,518	77,054	
146,726	95,195	557,227	119,863	73,120	79,175	59,919	2,608,665	38,934	71,617	
171,541	35,530	672,967	117,516	81,235	97,267	105,650	2,805,889	43,443	74,508	
148,916	422,348	742,454	200,419	71,176	107,562	97,333	3,353,654	72,772	75,669	

* Including $4,000, Government Grant for House of Refuge. † Including $6,001, Gov't Grant for "Good Roads."
‡ Including $15,987 from Government for "Good Roads." ¶ From Provisional County of Haliburton.
‖ Including $36,803 Government Grant for "Good Roads."
§ Including $5,000 proceeds of sale of 11 acres of "House of Refuge" lands.

STATISTICS OF ONTARIO

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

Disbursements, 1905.—*Continued.*

County Municipalities.	Printing, advertising, postage and stationery.	Insurance, heating, lighting and care of buildings.	Law costs, (including salaries.)	Other expenses of municipal government.	Roads and bridges.	Grants to Municipalities for roads and bridges.	Buildings and other works.
	$	$	$	$	$	$	$
1. Brant	478	2,024	220	143	73	.....	564
2. Bruce	1,387	1,473	282	982	7,628	5,834	303
3. Carleton	242	2,912	684	913	13,207	.....	.....
4. Dufferin	556	783	11	515	2,802	488	.....
5. Elgin	372	1,747	380	695	9,705	.....	.....
6. Essex	1,112	826	538	273	1,057	470	566
7. Frontenac	574	.....	332	571	2,409	.....	.....
8. Grey	648	906	156	1,211	4,542	.....	2,422
9. Haldimand	548	625	265	441	5,769	.....	313
10. Haliburton	79	126	.....	18	201	.....	.....
11. Halton	329	654	75	255	2,047	.....	562
12. Hastings	854	1,899	110	442	31,663	2,492	339
13. Huron	751	456	240	820	27,130	.....	5,347
14. Kent	394	3,124	326	155	958	9,331	.....
15. Lambton	925	2,304	263	1,464	3,918	.....	*8,891
16. Lanark	546	792	55	455	19,788	5,410	117
17. Leeds and Grenville	868	1,043	6	1,453	271	.....	.....
18. Lennox and Addington	703	1,347	82	817	155	.....	.....
19. Lincoln	361	1,708	55	974	14,859	.....	.....
20. Middlesex	735	779	253	550	20,914	24	.....
21. Norfolk	361	760	220	274	1,855	.....	.....
22. Northumberland & Dur.	881	664	788	2,334	2,051	30	.....
23. Ontario	985	1,111	50	426	2,521	.....	.....
24. Oxford	398	2,893	39	273	4,653	6,742	230
25. Peel	576	1,015	.....	499	4,533	.....	730
26. Perth	244	343	67	422	7,517	4,000	1,337
27. Peterborough	1,200	1,312	58	292	5,374	825	431
28. Prescott and Russell	492	623	.....	274	416	.....	64
29. Prince Edward	499	490	.....	620	449	.....	†16,371
30. Renfrew	562	1,635	1,571	172	1,578	75	767
31. Simcoe	1,907	465	595	1,363	4,840	‡43,241	2,538
32. Stormont, Dun. & Glen.	679	1,270	2,897	570	328	.....	439
33. Victoria	1,297	1,400	134	199	927	.....	‖23,036
34. Waterloo	1,251	1,887	43	407	3,451	.....	.....
35. Welland	368	1,576	208	641	2,877	.....	.....
36. Wellington	1,379	90	50	917	20,906	1,083	535
37. Wentworth	483	2,931	659	2,841	51,191	.....	1,954
38. York	1,157	2,135	469	1,046	9,364	.....	6,761
Totals :							
1905	27,181	48,126	12,181	26,717	293,927	80,045	74,617
1904	28,581	42,498	9,072	19,755	410,577	132,130	105,804
1903	25,335	46,860	7,689	27,735	300,908	105,007	62,197
1902	22,747	35,061	10,679	15,799	211,415	23,657	148,025
1901	25,273	41,361	6,785	26,716	181,634	19,873	34,938
1900	22,713	37,960	6,673	19,267	139,281	23,829	78,813
1899	22,583	37,274	6,644	19,714	144,762	20,620	78,667
1898	24,876	33,628	7,807	19,825	136,491	18,252	140,330
1897	26,548	32,448	6,453	22,744	125,909	26,244	24,211
1896	25,650	38,335	19,058	11,816	107,621	39,621	76,963

* Including $8,567 for new "Registry Office."
† Including $16,027 for House of Refuge.
‡ For "Good Roads."
‖ For House of Refuge.

COUNTY MUNICIPALITIES.—*Continued.*

of the County Municipalities for the year ending December, 31st, 1905.—*Continued.*

Disbursements, 1905.—*Continued.*

Support of the poor, and other charities.	Administration of justice, gaol maintenance, etc.	Grants to schools and other payments on education.	Sinking Fund investments and deposits.	Other investments and special deposits.	Debentures redeemed (principal.)	Interests paid on debentures.	Refund of money borrowed for current expenses.	Interest or discount on loans and advances.	Non-resident taxes paid local municipalities.	No.
$	$	$	$	$	$	$	$	$	$	
1,000	10,913	3,874	.....	.....	1,394	136	.....	.....	121	1
5,518	8,194	13,138	.....	.....	850	622	23,000	479	1,938	2
2,793	23,936	10,959	3,151	.....	.....	2,125	52,505	822	1,921	3
40	6,132	5,314	.....	.....	.....	.....	6,500	134	76	4
5,870	12,576	14,423	.....	.....	3,530	1,227	40,000	934	534	5
5,199	12,137	14,096	.....	.....	2,783	2,123	24,164	655	2,500	6
2,350	17,079	7,337	.....	.....	.....	2,382	49,009	1,131	1,093	7
3,866	13,356	15,977	1,625	.....	.....	1,100	.....	.....	1,480	8
161	6,385	9,633	.....	.....	.....	.....	7,806	335	.....	9
.....	708	5,065	.....	.....	.....	.....	1,300	5	398	10
76	5,798	5,463	.....	.....	.....	.....	.....	56	154	11
80	17,824	12,120	.....	12,488	605	1,000	39,305	1,423	987	12
5,973	11,308	16,616	.....	.....	.....	3,340	89,000	1,046	133	13
4,745	12,717	12,473	.....	.....	3,925	1,422	27,792	1,027	1,519	14
5,543	11,132	17,148	.....	.....	764	413	20,000	187	2,837	15
6,374	6,121	7,507	.....	7,921	.....	2,101	14,027	329	929	16
5,300	9,681	13,584	2,158	.....	589	2,702	16,332	396	874	17
580	5,249	8,983	.....	.....	7,700	2,997	.....	3	79	18
5,670	11,471	10,635	.....	.....	.....	.....	8,000	655	657	19
11,363	26,093	14,511	27,703	.....	13,000	18,393	27,878	280	263	20
4,388	7,347	8,694	.....	.....	.....	.....	20	272	462	21
390	17,590	18,173	4,457	.....	.....	1,125	44,000	1,599	311	22
5,451	10,593	11,914	.....	.....	2,388	1,104	90,000	878	71	23
6,442	10,999	9,121	.....	.....	9,188	4,792	.....	.....	142	24
1,583	5,723	8,060	.....	.....	940	205	16,500	371	107	25
7,510	10,815	9,071	10,628	.....	40,000	8,600	36,500	632	99	26
255	10,545	5,516	3,338	.....	4,478	3,546	3,991	710	1,847	27
.....	6,628	8,166	.....	.....	867	572	.....	1,029	3,137	28
278	3,537	5,662	.....	15,911	.....	.....	.....	247	21	39
1,122	6,672	11,548	1,117	.....	1,985	2,428	25,000	146	885	30
10,113	15,147	17,653	.....	.....	5,618	5,377	54,000	888	1,173	31
1,010	8,552	23,194	.....	.....	4,246	1,373	11,000	306	838	32
5,696	7,504	8,621	1,348	.....	.....	1,600	33,000	670	766	33
9,687	8,521	10,413	.....	.....	1,923	988	35,406	820	17	34
4,402	11,815	7,510	.....	.....	.....	.....	.....	176	1,896	35
8,381	12,826	12,979	.....	.....	.....	.....	39,000	460	192	36
1,000	12,515	7,108	.....	.....	1,215	584	.....	99	231	37
7,873	18,593	14,514	.....	.....	1,620	3,340	.....	344	201	38
148,082	414,732	417,076	55,528	36,320	109,608	77,717	835,035	19,544	30,889	
151,203	401,043	389,059	47,385	10,342	141,984	82,072	761,908	19,176	28,790	
129,636	390,259	386,065	39,853	12,000	150,528	78,047	613,402	13,890	16,584	
108,469	369,708	362,200	47,454	18,018	89,968	68,931	558,948	15,182	31,835	
114,322	441,876	359,746	31,824	24,998	109,737	73,396	473,612	13,656	40,847	
103,862	433,768	362,375	69,373	43,015	131,188	89,500	491,778	13,422	42,272	
102,511	434,721	363,949	46,941	31,000	103,706	72,022	444,459	15,390	70,386	
87,495	447,054	361,215	39,452	25,000	141,914	91,914	613,537	16,911	66,343	
88,782	468,832	360,176	52,525	37,321	163,391	88,379	704,425	18,676	83,313	
80,486	461,634	410,249	126,417	32,798	546,900	116,423	735,743	21,651	75,288	

STATISTICS OF ONTARIO

Showing abstract statement of Receipts, Disbursements, Assets and Liabilities

County Municipalities.	Disbursements, 1905.—*Concluded.*		Assets on December 31, 1905.				
	Miscellaneous.	Total disbursements.	Cash in treasury.	Rates due from local municipalities.	Sinking Fund investments and deposits.	Other investments and special deposits.	Land, buildings, furniture, etc.
	$	$	$	$	$	$	$
1. Brant	439	23,408	10,008	.....	.....	.....	106,000
2. Bruce	4,550	80,184	11,570	1,260	.....	.....	80,000
3. Carleton	1,688	121,117	.....	25,377	33,049	.....	310,000
4. Dufferin	250	25,399	2,133	2,579	.....	.....	40,000
5. Elgin	557	96,731	220	30,240	.....	.....	177,000
6. Essex	2,565	74,109	.....	26,628	.....	.....	111,000
7. Frontenac	692	89,093	8	26,698	.....	2,000	125,000
8. Grey	1,760	52,780	21,802	5,579	11,143	*17,990	118,338
9. Haldimand	483	36,156	55	2,878	.....	.....	40,000
10. Haliburton	146	8,953	778	1,228	.....	.....	.....
11. Halton	749	17,657	4,664	.....	.....	.....	40,000
12. Hastings	2,829	130,990	15	36,614	.....	12,488	78,723
13. Huron	1,402	169,086	4,639	36,442	32,887	.....	87,000
14. Kent	1,818	85,452	894	21,116	.....	.....	196,030
15. Lambton	1,949	80,896	16,460	13,366	.....	.....	74,000
16. Lanark	1,649	76,832	6,848	.....	.....	†7,921	89,596
17. Leeds and Grenville	863	59,693	335	13,330	29,811	.....	80,000
18. Lennox and Addington	258	30,775	1,938	20,948	.....	.....	55,000
19. Lincoln	367	58,028	4,495	9,084	.....	.....	104,720
20. Middlesex	1,466	169,543	.....	86,528	94,329	‡22,800	102,000
21. Norfolk	‖3,761	30,385	2,831	1,453	.....	.....	59,000
22. Northumberland & Dur.	1,988	102,027	5,507	11,618	19,739	.....	51,400
23. Ontario	391	130,587	28,188	1,447	.....	.....	78,000
24. Oxford	525	61,684	52,014	.....	.....	.....	190,000
25. Peel	1,251	43,888	1,591	.....	.....	.....	79,786
26. Perth	710	140,918	4,555	11,253	25,500	.....	125,000
27. Peterborough	995	47,594	.....	5,521	14,191	.....	93,355
28. Prescott and Russell	499	24,670	.....	14,883	.....	.....	40,590
29. Prince Edward	114	45,874	1,387	3,001	.....	¶15,911	41,000
30. Renfrew	656	60,807	571	21,265	13,867	.....	50,000
31. Simcoe	725	171,969	11,830	56,202	.....	300	143,000
32. Stormont, Dun. & Glen.	253	60,341	2,454	16,816	.....	.....	61,000
33. Victoria	1,729	91,709	932	8,418	1,348	.....	112,022
34. Waterloo	824	78,501	82	.....	.....	.....	87,000
35. Welland	2,768	36,521	7,159	2,384	.....	.....	97,422
36. Wellington	2,986	104,727	3,075	35,520	.....	.....	80,000
37. Wentworth	839	90,222	22,401	.....	.....	.....	245,000
38. York	1,388	74,290	397	30,300	.....	.....	140,000
Totals:							
1905	48,882	2,883,596	231,836	579,976	275,864	79,410	3,787,982
1904	47,217	2,956,737	222,494	579,103	278,649	45,686	3,582,853
1903	44,274	2,603,001	292,195	527,890	254,663	74,804	3,547,297
1902	41,642	2,299,022	244,271	482,437	220,645	72,176	3,518,663
1901	47,042	2,185,025	190,104	610,246	245,972	38,100	3,296,654
1900	52,377	2,279,536	192,995	489,635	257,895	47,115	3,267,078
1899	57,211	2,194,462	220,596	533,868	234,921	34,400	3,228,327
1898	46,432	2,429,027	179,638	531,222	212,386	34,400	3,229,542
1897	129,695	2,578,023	227,866	550,055	220,010	57,519	3,143,600
1896	55,897	3,130,991	222,663	587,538	181,015	42,198	3,179,066

* Deposit to Credit of General Account.
† Balance to Credit of County "Good Roads" Account.
‡ Being $15,000 Loan to Victoria Hospital and $7,800 Hospital Trust Funds.
‖ Including $3,326 rebates on County rates paid to minor municipalities.
¶ Proceeds of sale of House of Refuge debentures.

COUNTY MUNICIPALITIES.—*Concluded.*

of the County Municipalities for the year ending December 31st, 1905.—*Concluded.*

Assets, 1905.—*Concluded.*		Liabilities on December 31, 1905.							
Miscellaneous.	Total Assets	School grants unpaid.	Railway debentures outstanding (principal).	All other debentures outstanding (principal).	Loans for current expenses and interest due on same.	Local municipalities for non-resident taxes.	Miscellaneous.	Total liabilities.	No.
$	$	$	$	$	$	$	$	$	
.....	116,008	.....	.....	2,238	.....	.....	.....	2,238	1
3,758	96,588	80	.....	24,695	.....	.....	9,011	33,786	2
.....	368,426	.....	.....	60,000	38,357	921	.....	99,278	3
617	45,329	1,250	.....	.....	.....	798	1,014	3,062	4
15,151	222,611	.....	.....	30,735	30,000	90	3,030	63,855	5
6,459	144,087	.....	.....	50,284	23,569	.....	1,846	75,699	6
3,963	157,669	.....	79,400	.....	26,252	.....	2,382	108,034	7
716	175,568	60	.....	35,000	.....	91	.....	35,151	8
2,584	45,517	.....	.....	.....	1,762	.....	.....	1,762	9
.....	2,006	85	.....	.....	.....	.....	550	635	10
.....	44,664	.....	.....	.....	.....	.....	.....	.....	11
2,300	130,140	.....	.....	19,395	40,215	1,352	.....	60,962	12
.....	160,968	.....	.....	93,000	26,000	321	.....	119,321	13
10,059	228,099	1,408	.....	31,633	28,448	214	1,957	63,660	14
.....	103,826	.....	.....	21,780	10,000	935	489	33,204	15
6,335	110,700	.....	.....	57,200	.....	7	.....	57,207	16
1,000	124,476	.....	.....	57,272	.....	167	200	57,639	17
.....	77,886	.....	.....	46,100	.....	.....	.....	46,100	18
1,086	119,385	238	.....	.....	14,000	284	1,831	16,353	19
9,887	315,544	.....	.....	486,260	28,367	471	13,728	528,826	20
.....	63,284	.....	.....	.....	.....	.....	.....	.....	21
.....	88,264	.....	.....	40,000	8,000	216	.....	48,216	22
32	107,667	.....	.....	23,415	27,181	1,114	.....	51,710	23
829	242,843	150	.....	110,613	.....	223	5,688	116,674	24
2,300	83,677	.....	.....	4,155	.....	.....	1,385	5,510	25
2,038	168,346	.....	120,000	†38,097	.....	.....	4,524	162,621	26
5,647	118,714	1,164	.....	51,417	7,790	136	4,419	64,926	27
.....	55,473	.....	.....	13,436	21,715	.....	90	35,241	28
4,000	65,299	7	.....	16,000	15,927	.....	.....	31,934	29
920	86,623	35	.....	53,739	5,000	299	1,676	60,749	30
26,851	238,183	.....	.....	129,887	35,000	.....	16,649	181,536	31
15,950	96,220	.....	.....	29,433	10,000	60	.....	39,493	32
8,775	131,495	.....	.....	40,000	19,000	109	54	59,163	33
395	87,477	.....	.....	28,143	1,699	.....	352	30,194	34
*34,472	141,437	176	.....	.....	5,136	.....	30	5,342	35
6,259	124,854	3,653	.....	.....	18,000	594	12,693	34,940	36
34,556	301,957	.....	.....	107,664	.....	.....	1,381	109,045	37
5,236	175,933	45	.....	94,207	6,917	165	16,868	118,202	38
212,175	5,167,243	8,351	199,400	1,795,798	448,335	8,567	101,847	2,562,298	
150,276	4,859,061	12,500	199,400	1,767,658	460,496	5,867	126,651	2,572,572	
105,769	4,802,618	11,453	212,900	1,671,109	385,307	6,537	99,347	2,386,653	
96,038	4,634,230	12,304	237,000	1,492,392	291,942	20,192	101,113	2,154,943	
138,035	4,519,111	9,854	237,000	1,433,293	306,713	7,308	54,675	2,048,843	
142,918	4,397,636	7,657	258,500	1,459,491	300,807	11,295	66,342	2,104,092	
128,168	4,380,280	11,585	305,000	1,466,688	320,585	11,027	89,429	2,204,314	
151,806	4,338,994	11,524	322,000	1,459,056	327,025	25,889	68,664	2,214,158	
156,851	4,355,901	10,903	419,712	1,383,395	387,249	19,112	88,700	2,309,071	
153,955	4,366,435	12,612	408,223	1,440,749	425,383	21,540	60,142	2,368,689	

* Including $30,000 for roads and bridges, per auditors' estimate.

† Including $948 understated in 1904.

POPULATION, ASSESSMENT AND TAXATION
1906.

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $.
ALGOMA :		$	$	$	$	$	$ c.	
Balfour.....Tp.	830	100,024	.....	.....	100,024	4,088	4 93	40.9
Chapleau..... "	669	144,900	8,827	88,950	242,677	3,202	4 79	13.2
Day and Bright "	271	87,781	500	.....	88,281	1,562	5 76	17.7
Drury, etc..... "	910	203,859	4,250	33,466	241,575	6,554	7 20	27.1
Hallam ..... "	221	45,650	.....	.....	45,650	646	2 92	14.2
Hilton ..... "	440	97,630	4,730	250	102,610	1,741	3 96	17.0
Jocelyn ..... "	500	73,280	400	.....	73,680	2,004	4 01	27.2
Johnson, etc... "	817	190,453	4,330	.....	194,783	4,693	5 74	24.1
Korah ..... "	513	405,618	.....	.....	405,618	4,513	8 80	11.1
Laird ..... "	446	111,348	900	.....	112,248	1,811	4 06	16.1
Macdonald, etc. "	678	90,620	3,400	.....	94,020	4,093	6 04	43.5
Nairn and Lorne "	286	45,672	3,423	.....	49,095	1,142	3 99	23.3
Plummer Add'l "	284	82,877	.....	.....	82,877	1,723	6 07	20.8
Prince ..... "	236	79,615	.....	.....	79,615	800	3 39	10.0
Rayside ..... "	836	93,484	.....	.....	93,484	2,964	3 55	31.7
St. Joseph .... "	1,117	166,237	3,670	200	170,107	4,161	3 73	24.5
Salter, etc..... "	781	133,575	350	200	134,125	2,654	3 40	19.8
Tarentorus ... "	399	308,450	.....	.....	308,450	5,778	14 48	18.7
Thessalon ..... "	551	110,591	775	.....	111,366	2,769	5 03	24.9
Thompson .... "	209	41,628	500	.....	42,128	996	4 77	23.6
Waters..... "	167	40,467	.....	.....	40,467	950	5 69	23.5
Totals { 1906	11,161	2,653,759	36,055	123,066	2,812,880	58,844	5 27	20.9
Totals { 1905	13,657	2,915,990	73,147	44,524	3,033,661	64,126	4 70	21.1
†Blind River ..Tn.	1,726	209,440	44,570	12,520	266,530	11,492	6 66	43.1
Bruce Mines... "	761	168,672	12,047	.....	180,719	3,682	4 84	20.4
Massey..... "	750	136,416	16,902	2,300	155,618	3,668	4 89	23.6
Sault Ste. Marie "	7,863	4,648,190	262,265	87,496	4,997,951	‡88,548	11 26	17.7
Steelton.. .... "	2,379	2,180,027	3,628	20,300	2,203,955	§20,488	8 61	9.3
Thessalon ..... "	1,243	266,830	48,002	.....	314,832	7,042	5 67	22.4
†Webbwood... "	600	72,810	9,550	2,200	84,560	2,563	4 27	30.3
Totals { 1906	15,322	7,682,385	396,964	124,816	8,204,165	137,483	8 97	16.8
Totals { 1905	12,746	7,053,338	312,792	173,064	7,539,194	118,347	9 29	15.7
BRANT :								
Brantford .....Tp.	5,185	4,171,783	69,941	5,530	4,247,254	34,311	6 62	8.1
Burford ..... "	4,072	2,269,613	17,665	8,357	2,295,665	26,112	6 41	11.4
Dumfries S.... "	2,310	2,463,142	49,484	9,245	2,521,871	20,477	8 86	8.1
Oakland ..... "	758	415,831	7,960	2,415	426,206	4,184	5 52	9.8
Onondaga ..... "	969	764,680	2,750	1,950	769,380	6,511	6 72	8.5
Totals { 1906	13,294	10,085,079	147,800	27,497	10,260,376	91,595	6 89	8.9
Totals { 1905	12,953	9,876,500	159,752	28,921	10,065,173	82,253	6 35	8.2
Paris ...Tn. { 1906	3,696	1,073,662	163,527	60,590	1,297,779	25,016	6 77	19.3
Paris ...Tn. { 1905	3,682	1,030,037	152,294	59,789	1,242,120	26,686	7 25	21.5
*Brantford, City { 1906	19,092	8,072,639	1,325,304	240,949	9,638,892	236,133	12 37	24.5
*Brantford, City { 1905	19,743	7,333,520	928,800	109,830	8,372,150	194,283	9 84	23.2

‡ Lake Superior Power Co. pays $5,500 in lieu of taxes.
§ Industrial Works and Algoma Central Railway belonging to Lake Superior Power Co. pays $5,000 as special tax.
* Municipalities so marked in this table are separated from the county for county purposes.
† Incorporated 1906. Blind River Township dissolved May, 1906, and Blind River Town incorporated.

POPULATION, ASSESSMENT AND TAXATION.—*Continued*

Municipalities.		Assessed population.	Assessed values				Taxes imposed for all purposes, including schools.		
			Real Property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
BRUCE:			$	$	$	$	$	$ c.	
Albemarle	Tp.	1,198	362,925			362,925	5,331	4 45	14.7
Amabel	"	3,510	824,800	8,100		832,900	13,211	3 76	15.9
Arran	"	2,184	1,479,125	2,025		1,481,150	12,849	5 88	8.7
Brant	"	3,276	2,504,575	7,300		2,511,875	18,818	5 74	7.5
Bruce	"	2,562	1,826,357	3,928		1,830,285	16,702	6 52	9.1
Carrick	"	4,204	2,745,085	39,290	9,530	2,793,905	18,458	4 39	6.6
Culross	"	2,307	1,749,706	4,000		1,753,706	13,005	5 64	7.4
Eastnor	"	1,636	602,200	14,510	2,045	618,755	7,884	4 82	12.7
Elderslie	"	2,018	1,931,500	375	700	1,932,575	12,790	6 34	6.6
Greenock	"	2,650	1,819,129	13,320	4,000	1,836,449	13,891	5 24	7.6
Huron	"	3,050	2,611,250	27,696	1,900	2,640,846	18,372	6 02	7.0
Kincardine	"	2,506	1,814,000	5,500		1,819,500	16,764	6 69	9.2
Kinloss	"	1,853	1,558,205	4,550	1,000	1,563,755	10,367	5 59	6.6
Lindsay	"	758	145,970	1,750		147,720	4,009	5 29	27.1
St. Edmunds	"	340	80,413	2,826		83,239	1,625	4 78	19.5
Saugeen	"	1,414	1,004,101	1,250		1,005,351	9,004	6 37	9.0
Totals	1906	35,466	23,059,341	136,420	19,175	23,214,936	193,080	5 44	8.3
	1905	35,845	22,718,271	140,917	23,817	22,883,005	182,239	5 08	8.0
Lucknow	Vill.	1,040	248,034	44,608	2,990	295,632	8,188	7 87	27.7
Paisley	"	881	283,878	35,777	12,693	332,348	7,532	8 55	22.7
Port Elgin	"	1,269	297,939	33,181	9,627	340,747	9,135	7 20	26.8
Tara	"	582	189,910	20,984	150	211,044	3,505	6 02	16.6
Teeswater	"	897	233,125	31,290	1,149	265,564	5,037	5 61	19.0
Tiverton	"	426	84,925	10,691	2,997	98,613	1,293	3 04	13.1
Chesley	Tn.	1,860	499,200	33,145	9,260	541,605	12,857	6 91	23.7
Kincardine	"	2,676	603,448	71,477	10,800	685,725	16,294	6 09	23.8
Southampton	"	1,735	325,622	62,738	4,140	392,500	9,604	5 54	24.5
Walkerton	"	2,885	668,175	100,930	23,055	792,160	22,249	7 71	28.1
Wiarton	"	2,348	675,290	75,030	9,638	759,958	22,358	9 52	29.4
Totals	1906	16,599	4,109,546	519,851	86,499	4,715,896	118,052	7 11	25.0
	1905	16,649	4,131,476	529,258	88,103	4,748,837	115,336	6 93	24.3
CARLETON:									
Fitzroy	Tp.	2,437	1,417,556	3,575	250	1,421,381	11,837	4 86	8.3
Gloucester	"	6,563	1,764,177	16,550		1,780,727	30,180	4 60	16.9
Goulbourn	"	2,324	855,127	9,250		864,377	13,230	5 69	15.3
Gower N	"	1,834	1,019,945	19,090	6,484	1,045,519	9,341	5 09	8.9
Huntley	"	2,025	1,272,870	14,275	3,225	1,290,370	11,391	5 63	8.8
March	"	1,055	468,967	600		469,567	4,467	4 23	9.5
Marlborough	"	1,341	621,270	4,215	665	626,150	7,129	5 32	11.4
Nepean	"	5,419	2,845,311	23,470	26,100	2,894,881	29,747	5 49	10.3
Osgoode	"	4,228	1,539,875	18,820		1,558,695	32,584	7 71	20.9
Torbolton	"	918	136,600			136,600	3,923	4 27	28.7
Totals	1906	28,144	11,941,698	109,845	36,724	12,088,267	153,829	5 47	12.7
	1905	27,804	11,151,868	126,175	20,594	11,298,637	144,547	5 20	12.8
Hintonburgh	Vill.	2,969	572,700	28,395	5,305	606,400	18,397	6 20	30.3
Ottawa East	"	1,560	477,381	20,797	500	498,678	11,256	7 22	22.6
Richmond	"	400	67,600	7,300	250	75,150	1,731	4 33	23.0
Totals	1906	4,929	1,117,681	56,492	6,055	1,180,228	31,384	6 37	26.6
	1905	4,931	1,078,343	55,135	13,315	1,146,793	29,618	6 01	25.8

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real Property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
CARLETON—*Con.*		$	$	$	$	$	$ c.	
*Ottawa, City { 1906	67,572	32,286,275	3,981,950	1,704,955	37,973,180	908,325	13 44	23.9
*Ottawa, City { 1905	65,120	30,306,716	1,998,100	708,600	33,013,416	797,270	12 24	24.1
DUFFERIN:								
Amaranth ..... Tp.	2,316	1,848,766	1,280	.....	1,850,046	13,407	5 79	7.2
Garafraxa E. .. "	1,700	1,139,655	2,500	.....	1,142,155	10,303	6 06	9.0
Luther E..... "	1,613	1,190,833	4,850	450	1,196,133	11,549	7 16	9.7
Melancthon ... "	3,064	2,031,074	15,672	.....	2,046,746	17,243	5 63	8.4
Mono..... "	2,812	2,284,120	2,570	.....	2,286,690	17,307	6 15	7.6
Mulmur..... "	2,658	1,457,550	5,250	500	1,463,300	15,792	5 94	10.8
Totals { 1906	14,163	9,951,998	32,122	950	9,985,070	85,601	6 04	8.6
Totals { 1905	14,520	9,083,472	32,954	1,125	9,117,551	77,083	5 31	8.5
Grand Valley. Vill.	833	199,500	28,750	5,130	233,380	4,348	5 22	18.6
Shelburne..... "	1,182	360,870	45,392	15,190	421,452	8,967	7 59	21 3
Orangeville....Tn.	2,601	850,394	100,291	9,677	960,362	22,867	8 79	23.8
Totals { 1906	4,616	1,410,764	174,433	29,997	1,615,194	36,182	7 84	22.4
Totals { 1905	4,716	1,398,003	179,999	30,387	1,608,389	37,873	8 03	23.5
DUNDAS:								
Matilda .....Tp.	3,622	1,354,350	6,300	7,125	1,367,775	22,196	6 13	16.2
Mountain ..... "	2,784	1,309,565	5,427	.....	1,314,992	25 583	9 19	19.5
Williamsburg.. "	3,261	1,472,510	13,550	7,300	1,493,360	24,521	7 52	16.4
Winchester.... "	3,216	1,430,790	10.150	.....	1,440,940	27,231	8 47	18.9
Totals { 1906	12,883	5,567.215	35,427	14,425	5,617,067	99,531	7 73	17.7
Totals { 1905	12,816	5,577,412	27,967	6,345	5,611,724	96,257	7 51	17.2
Chesterville...Vill.	846	167,428	21,074	2,468	190,970	4,467	5 28	23.4
Iroquois ..... "	859	310,800	23,905	10,721	345,426	10,837	12 62	31.4
Morrisburg.... "	1,391	486,895	36,832	38,093	561,820	14,311	10 29	25.5
Winchester .... "	1,179	444,420	41.968	7,850	494,238	8,026	6 81	16.2
Totals { 1906	4,275	1,409,543	123,779	59,132	1,592,454	37,641	8 80	23.6
Totals { 1905	4,610	1,206,185	121,155	55,031	1,382,371	37,646	8 17	27.2
DURHAM:								
Cartwright ....Tp.	1,643	852,238	9,450	.....	861,688	10,324	6 28	12.0
Cavan ..... "	2,250	1,561,102	1,900	.....	1,563,002	17,826	7 92	11.4
Clarke ..... "	3,304	2,082,805	19,430	3,410	2,105,645	19,861	6 01	9 4
Darlington .... "	3,680	2,362,801	10,800	10,745	2,384,346	23,380	6 35	9.8
Hope ..... "	2,845	2,197,756	1,900	5,300	2,204,956	18,619	6 54	8.4
Manvers ..... "	2,732	883,858	12,500	3,070	899,428	15,623	5.72	17.4
Totals { 1906	16,454	9,940,560	55,980	22,525	10,019,065	105,633	6 42	10.5
Totals { 1905	16,686	10,016,010	41,955	9,280	10,067,245	94,495	5 66	9.4
Millbrook ....Vill.	811	181,566	26,784	1,200	209,550	4,492	5 54	21.4
Newcastle..... "	621	189,623	10,394	1,400	201,417	4,062	6 54	20.2
Bowmanville..Tn.	2,807	1,012,845	99,065	42,895	1,154,805	30,558	10 89	26.5
Port Hope..... "	1,472	1,391,215	170,400	40,472	1,602,087	44,121	9 87	27.5
Totals { 1906	8,711	2,775,249	306,643	85,967	3,167,859	83,233	9 55	26.3
Totals { 1905	8,660	2,712,538	309,171	81,945	3,103,654	78,420	9 06	25.3

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per Head.	Mills on $
ELGIN:		$	$	$	$	$	$ c.	
Aldborough ...Tp.	4,336	2,111,430	39,590	1,850	2,152,870	35,587	8 21	16.5
Bayham ..... "	3,446	1,201,842	22,262	6,136	1,230,240	24,870	7 22	20.2
Dorchester S... "	1,568	1,759,765	6,650	1,150	1,767,565	11,864	9 48	8.4
Dunwich..... "	3,029	2,489,548	6,925	20,700	2,517,173	22,279	7 36	8.9
Malahide..... "	3,302	2,572,325	14,580	6,171	2,593,076	27,041	8 19	10.4
Southwold..... "	3,536	3,154,202	17,620	.....	3,171,822	26,203	7 41	8.3
Yarmouth..... "	4,635	3,482,951	15,525	.....	3,498,476	42,613	9 19	12.2
Totals { 1906	23,852	16,772,063	123,152	36,007	16,931,222	193,457	8 11	11.4
Totals { 1905	23,899	16,583,376	119,172	36,740	16,739,288	180,898	7 57	19.8
Dutton .....Vil.	948	331,360	19,188	6,900	357,448	5,711	6 02	16.0
Port Stanley... "	627	153,350	13,522	1,000	167,872	2,727	4 35	16.2
Springfield .... "	457	107,278	14,700	920	122,898	2,435	5 33	19.8
Vienna..... "	366	73,350	4,010	994	78,354	1,755	4 80	22.4
Aylmer.....Tn.	2,102	759,365	69,690	28,565	857,620	25,168	11 97	29.3
Totals { 1906	4,500	1,424,703	121,110	38,379	1,584,192	37,796	8 40	23.9
Totals { 1905	4,492	1,333,496	129,695	42,526	1,505,717	36,752	8 18	24.4
*St. Thomas, { 1906	13,332	5,063,905	405,070	107,520	5,576,495	147,204	11 04	26.4
City { 1905	13,060	4,851,894	355,785	70,230	5,277,909	145,445	11 14	27.6
ESSEX:								
Anderdon.....Tp.	1,947	720,609	1,250	.....	721,859	12,276	6 31	17.0
Colchester N... "	1,920	863,037	710	.....	863,747	19,319	10 06	22.4
Colchester S... "	2,660	1,094,956	12,711	4,800	1,112,467	27,263	10 25	24.5
Gosfield N..... "	1,883	1,278,985	.....	.....	1,278,985	17,185	9 13	13.4
Gosfield S..... "	2,068	1,380,292	4,255	5,600	1,390,147	19,212	9 29	13.8
Maidstone..... "	2,639	1,761,110	5,875	.....	1,766,985	24,250	9 19	13.7
Malden..... "	1,389	901,925	.....	1,200	903,125	10,886	7 84	12.1
Mersea..... "	3,971	2,338,877	6,800	14,890	2,360,567	38,370	9 66	16.3
Rochester..... "	2,091	1,493,255	12,750	2,540	1,508,545	16,189	7 74	10.7
Sandwich E.... "	2,750	940,287	21,385	.....	961,672	15,848	5 76	16.5
Sandwich S.... "	1,565	819,592	1,500	.....	821,092	12,937	8 27	15.8
Sandwich W... "	2,294	1,062,695	4,600	.....	1,067,295	13,432	5 86	12.6
Tilbury N..... "	1,892	997,496	1,645	225	999,366	14,208	7 51	14.2
Tilbury W .... "	1,706	914,603	21,477	6,250	942,330	16,637	9 75	17.7
Totals { 1906	30,775	16,567,719	94,958	35,505	16,698,182	258,012	8 38	15.5
Totals { 1905	31,967	14,100,045	103,715	27,595	14,231,355	234,897	7 35	16.5
Belle River ...Vil.	504	95,785	10,985	141	106,911	1,689	3 35	15.8
Amherstburg...Tn.	2,296	565,575	40,535	13,642	619,752	19,264	8 39	31.1
Essex ..... "	1,299	431,274	45,774	4,826	481,874	14,683	11 30	30.5
Kingsville..... "	1,578	411,400	29,279	4,854	445,533	13,104	8 30	29.4
Leamington.... "	2,860	750,577	75,883	31,213	857,673	19,397	6 78	22.6
Sandwich ..... "	1,829	643,177	52,678	6,293	702,148	12,597	6 89	17.9
Totals { 1906	10,366	2,897,788	255,134	60,969	3,213,891	80,734	7 79	25.1
Totals { 1905	10,162	2,861,000	266,761	61,586	3,189,347	80,052	7 88	25.1
*Pelee Island { 1906	636	313,780	4,910	.....	318,690	10,053	15 81	31.5
Tp. { 1905	642	314,720	5,560	.....	320,280	9,390	14 63	29.3
*Walkerville { 1906	2,648	2,393,419	1,242,882	133,551	3,769,852	57,285	21 63	15.2
Tn. { 1905	2,425	2,220,543	1,019,877	146,133	3,386,553	52,287	21 56	15.4

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.		Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
			Real property.	Business assessment	Income.	Total.	Total.	Per Head.	Mills on $
ESSEX—*Continued.*			$	$	$	$	$	$ c.	
*Windsor, City	1906	14,802	7,094,655	663,225	157,925	7,915,805	191,483	12 94	24.2
	1905	14,007	6,669,455	648,775	157,740	7,475,970	173,466	12,38	23.0
FRONTENAC:									
Barrie.....Tp.		497	72,520	.....	.....	72,520	1,456	2 93	20.1
Bedford..... "		1,249	319,433	.....	3,000	322,433	6,668	5 34	20.7
Clarendon & M. "		752	82,000	797	.....	82,797	1,801	2 39	21.8
Hinchinbrooke "		1,323	221,719	1,575	.....	223,294	5,898	4 46	26.4
Howe Island .. "		277	78,142	.....	.....	78,142	1,934	6 98	24.7
Kennebec..... "		1,135	103,524	6,530	.....	110,054	3,646	3 21	33.1
Kingston..... "		2,565	1,581,339	7,305	.....	1,588,644	15,553	6 06	9.8
Loughborough. "		1,671	393,365	23,400	.....	416,765	8,384	5 02	20.1
Olden ..... "		1,058	229,211	2,080	.....	231,291	4,443	4 20	19.2
Oso ..... "		1,163	114,503	921	.....	115,424	3,113	2 68	27.0
Palmerston, etc "		954	88,471	3,310	.....	91,781	2,406	2 52	26.2
Pittsburg..... "		2,231	818,032	.....	.....	818,032	15,558	6 97	19.0
Portland ..... "		1,929	464,410	3,450	.....	467,860	10,975	5 69	23.5
Storrington.... "		1,707	418,342	5,534	.....	423,876	9,404	5 51	22.2
Wolfe Island .. "		1,508	597,945	3,868	.....	601,813	11,065	7 34	18.4
Totals	1906	20,019	5,582,956	58,770	3,000	5,644,726	102,304	5 11	18.1
	1905	20,102	5,485,647	47,136	400	5,533,183	104,207	5 18	18.8
Garden Island, Vill.		210	29,000	9,000	12,500	50,500	1,641	7 81	32.5
Portsmouth.... "		625	107,190	5,200	2,279	114,669	2,417	3 87	21.1
Totals	1906	835	136,190	14,200	14,779	165,169	4,058	4 86	24.6
	1905	868	133,708	23,334	11,200	168,242	4,077	4 70	24.2
*Kingston, City	1906	18,424	6,735,092	883,145	294,420	7,912,657	162,897	8 84	20.6
	1905	18,209	6,827,735	857,300	205,475	7,890,510	160,504	8 81	20.3
GLENGARRY:									
Charlottenburg Tp.		4,947	2,365,280	250	2,400	2,367,930	26,417	5 34	11.2
Kenyon..... "		3,709	1,446,906	15,341	1,355	1,463,602	21,079	5 68	14.4
Lancaster ..... "		3,529	2,340,503	13,840	13,913	2,368,256	15,410	4 37	6.5
Lochiel ..... "		4,113	1,294,076	16,480	.....	1,310,556	18,418	4 48	14.1
Totals	1906	16,298	7,446,765	45,911	17,668	7,510,344	81,324	4 99	10.8
	1905	16,984	6,333,363	54,000	18,901	6,406,264	72,127	4 25	11.3
Lancaster ....Vill.		555	143,865	18,290	1,845	164,000	2,113	3 81	12.9
Maxville..... "		791	206,265	19,590	1,350	227,205	2,640	3 34	11.6
Alexandria....Tn.		2,214	416,955	50,929	9,283	477,167	13,745	6 21	28.8
Totals	1906	3,560	767,085	88,809	12,478	868,372	18,498	5 48	21.3
	1905	3,598	752,390	102,232	15,340	869,962	17,591	4 89	20.2
GRENVILLE:									
Augusta.....Tp.		3,587	1,325,047	21,770	1,100	1,347,917	17,353	4 83	12.9
Edwardsburg.. "		3,367	1,184,890	10,780	5,568	1,201,238	15,645	4 64	13 0
Gower S ..... "		725	316,875	.....	.....	316,875	3,701	5 10	11.7
Oxford on R .. "		2,439	807,120	2,041	1,750	810,911	12,640	5 18	15.6
Wolford..... "		1,470	924,974	8,540	2,700	936,214	8,125	5 53	8.7
Totals	1906	11,588	4,558,906	43,131	11,118	4,613,155	57,464	4 96	12.5
	1905	11,709	4,537,304	12,711	12,283	4,592,298	54,373	4 64	11.8

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
GRENVILLE—*Con.*		$	$	$	$	$	$ c.	
Cardinal .....Vill.	1,159	324,725	49,431	7,275	381,431	5,306	4 58	13.9
Kemptville.... "	1,420	386,381	26,402	14,213	426,996	10,525	7 41	24.6
Merrickville... "	1,026	277,850	32,165	27,718	337,733	6,417	6 25	19.0
Totals { 1906	3,605	988,956	107,998	49,206	1,146,160	22,248	6 17	19.4
Totals { 1905	3,398	976,487	93,728	47,022	1,117,237	20,586	6 06	18.4
*Prescott { 1906	3,041	949,005	140,704	43,795	1,133,504	26,473	8 61	23.4
Tn. { 1905	3,135	935,205	163,652	51,598	1,150,455	26,308	8 39	22.9
GREY:								
Artemesia.....Tp.	3,073	1,190,679	25,190	.....	1,215,869	17,156	5 59	14.1
Bentinck..... "	2,957	1,501,930	6,900	250	1,509,080	13,525	4 57	9.0
Collingwood... "	3,184	1,374,227	17,010	.....	1,391,237	19,178	6 02	13.8
Derby ..... "	1,811	965,232	4,450	.....	969,682	10,546	5 82	10.9
Egremont..... "	2,855	2,047,760	13,790	2,305	2,063,855	17,002	5 96	8.2
Euphrasia..... "	2,705	1,311,525	.....	3,300	1,314,825	16,849	6 23	12.8
Glenelg..... "	2,426	759,615	2,600	.....	762,215	10,364	4 27	13.6
Holland ..... "	2,444	1,340,268	17,680	.....	1,357,948	11,726	4 79	8.6
Keppel ..... "	3,774	738,388	26,320	.....	764,708	15,350	4 06	20.1
Normanby .... "	3,973	2,105,655	33,325	1,900	2,140,880	22,558	5 68	10.5
Osprey..... "	2,789	1,029,320	6,250	.....	1,035,570	13,664	4 90	13.2
Proton ..... "	3,426	1,474,135	2,850	.....	1,476,985	17,573	5 13	11.9
St. Vincent.... "	2,674	1,385,500	.....	.....	1,385,500	18,951	7 08	13.7
Sarawak ..... "	1,405	339,720	14,208	.....	353,928	7,174	5 10	20.2
Sullivan ..... "	2,833	2,009,825	3,700	.....	2,013,525	17,254	6 09	8.6
Sydenham .... "	3,222	1,826,240	1,500	200	1,827,940	19,958	6 19	10.9
Totals { 1906	45,551	21,400,019	175,773	7,955	21,583,747	248,828	5 46	11.5
Totals { 1905	46,196	20,726,046	170,008	9,857	20,905,911	225,829	4 88	10.8
Chatsworth...Vill.	399	111,500	16,546	600	128,646	1,970	4 94	15.3
Dundalk ..... "	832	207,210	35,340	850	243,400	6,490	7 80	26.7
Markdale ..... "	931	260,825	33,420	2,605	296,850	4,828	5 19	16.3
Durham .....Tn.	1,700	316,591	308,960	20,100	645,651	11,548	6 79	17.9
Hanover ..... "	2,168	396,890	44,234	15,123	456,247	12,320	5 68	27.0
Meaford ..... "	2,370	829,731	103,665	11,136	944,532	28,685	12 10	30.4
Owen Sound .. "	10,765	4,088,854	506,578	88,378	4,683,810	115,903	10 77	24.7
Thornbury .... "	797	240,105	28,260	6,381	274,746	5,746	7 21	20.9
Totals { 1906	19,962	6,451,706	1,077,003	145,173	7,673,882	187,490	9 39	24.4
Totals { 1905	18,878	6,474,042	967,348	189,914	7,631,304	156,748	8 30	20.5
HALDIMAND:								
Canborough ...Tp.	861	517,635	3,850	534	522,019	5,437	6 29	10.4
Cayuga N ..... "	1,483	905,052	7,455	2,750	915,257	8,482	5 72	9.3
Cayuga S..... "	673	396,225	.....	100	396,325	3,218	4 79	8.1
Dunn ..... "	784	432,555	2,500	.....	435,055	4,060	5 18	9.3
Moulton..... "	1,598	655,942	.....	.....	655,942	7,402	4 63	11.3
Oneida..... "	1,382	1,009,100	6,800	.....	1,015,900	9,420	6 82	9.3
Rainham..... "	1,691	787,786	10,330	1,335	799,451	7,816	4 62	9.8
Seneca..... "	1,644	1,208,216	3,680	.....	1,211,896	10,575	6 43	8.7
Sherbrooke.... "	328	162,603	1,180	.....	163,783	1,323	4 03	8.1
Walpole ..... "	3,567	2,033,930	28,120	10,155	2,072,205	23,518	6 59	11.3
Totals { 1906	14,014	8,109,044	63,915	14,874	8,187,833	81,251	5 80	9.9
Totals { 1905	14,349	7,951,133	68,437	7,428	8,026,998	75,441	5 26	9.4

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
HALDIMAND—*Con.*		$	$	$	$	$	$ c.	
Caledonia ....Vill.	794	171,444	19,373	1,067	191,884	4,535	5 70	23.6
Cayuga..... "	760	202,711	24,259	6,223	233,193	5,120	6 74	22.0
Hagersville.... "	1,121	225,325	31,807	1,100	258,232	5,238	4 67	20.3
Dunnville .....Tn.	2,520	743,860	90,505	9,875	844,240	18,662	7 41	22.1
Totals {1906	5,195	1,343,340	165,944	18,265	1,527,549	33,555	6 46	22.0
Totals {1905	5,089	1,270,275	159,777	13,900	1,443,952	31,785	6 25	22.0
HALIBURTON :								
Anson and H..Tp.	255	33,500	1,670	200	35,370	1,039	4 07	29.4
Cardiff..... "	617	53,909	1,500	.....	55,409	2,281	3 70	41.2
Dysart, etc .... "	1,033	304,598	7,990	12	312,600	6,503	6 30	20.8
Glamorgan .... "	486	32,107	900	.....	33,007	1,481	3 05	44.9
Lutterworth... "	411	37,332	.....	.....	37,332	1,398	3 40	37.4
Minden..... "	1,166	87,776	2,900	700	91,376	3,426	2 94	37.5
Monmouth .... "	613	54,837	.....	.....	54,837	2,623	4 28	47.8
Sherbourne.... "	272	106,181	2,825	.....	109,006	1,180	4 34	10.8
Snowdon..... "	641	†73,753	.....	.....	†73,753	†2,649	4 13	35.9
Stanhope..... "	452	45,481	.....	.....	45,481	1,442	3 19	31.7
Totals {1906	5,946	829,474	17,785	912	848,171	24,022	4 04	28.3
Totals {1905	5,945	862,515	17,488	2,024	882,027	22,575	3 80	25 6
HALTON :								
Esquesing .....Tp.	3,581	2,202,654	32,065	6,725	2,241,444	17,916	5 00	8.0
Nassagaweya .. "	2,142	1,465,635	18,800	7,700	1,492,135	8,962	4 18	6.0
Nelson..... "	2,598	2,160,234	2,250	700	2,163,184	16,953	6 53	7.8
Trafalgar..... "	3,609	2,599,519	1,505	2,800	2,603,824	18,499	5 13	7.1
Totals {1906	11,930	8,428,042	54,620	17,925	8,500,587	62,330	5 22	7.3
Totals {1905	11,095	8,653,417	49,665	18,650	8,721,732	56,340	5 08	6.5
Acton.....Vill.	1,569	341,135	35,685	3,110	379,930	7,293	4 65	19.2
Burlington .... "	1,400	471,799	24,238	6,400	502,437	7,472	5 34	14.9
Georgetown ... "	1,522	359,770	37,778	10,525	408,073	9,787	6 43	24.0
Milton .....Tn.	1,485	393,829	40,331	7,176	441,336	13,096	8 82	29.7
Oakville ..... "	1,786	721,566	34,697	17,255	773,518	19,181	10 74	24.8
Totals {1906	7,762	2,288,099	172,729	44,466	2,505,294	56,829	7 32	22.7
Totals {1905	7,699	2,155,458	168,210	30,587	2,354,255	44,477	5 78	18.9
HASTINGS :								
Bangor, etc....Tp.	939	54,425	1,460	.....	55,885	3,090	3 29	55.3
Carlow..... "	755	57,246	1,000	.....	58,246	2,985	3 95	51.2
Dungannon ... "	618	83,920	668	.....	84,588	2,675	4 33	31.6
Elzevir & Grim. "	1,380	307,078	3,000	.....	310,078	5,208	3 77	16.8
Faraday ..... "	834	75,855	500	.....	76,355	2,497	2 99	32.7
Hungerford ... "	3,569	1,573,097	33,875	.....	1,606,972	14,094	3 95	8.8
Huntingdon... "	2,104	1,146,640	.....	.....	1,146,640	9,933	4 72	8.7
Limerick..... "	457	59,615	.....	.....	59,615	1,845	4 04	30.9
Madoc..... "	2,686	908,335	2,000	.....	910,335	13,251	4 93	14.6
Marmora & L.. "	1,689	267,963	1,050	.....	269,013	7,273	4 31	27.0
Mayo ..... "	463	30,410	1,000	.....	31,410	1,907	4 12	60.7
Monteagle & H. "	1,675	96,000	.....	.....	96,000	4,172	2 49	43.5
Rawdon..... "	3,123	1,166,085	7,100	1,200	1,174,385	17,003	5 44	14.5
Sidney ..... "	3,941	2,075,418	32,104	3,800	2,111,322	26,708	6 78	12.6

† Taken from 1905 return, as 1906 has not yet been received.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.		Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
			Real Property.	Business assessment	Income.	Total.	Total.	Per Head.	Mills on $
HASTINGS—*Con.*			$	$	$	$	$	$ c.	
Thurlow	Tp.	3,480	2,106,550	325,050	.....	2,431,600	19,952	5 73	8.2
Tudor and C...	"	827	113,955	3,297	500	117,752	3,383	4 09	28.7
Tyendinaga ...	"	3,275	1,409,216	1,100	.....	1,413,316	16,951	5 18	12.0
Wollaston.....	"	778	151,918	3,000	.....	154,918	2,936	3 77	19.0
Totals	1906	32,593	11,683,726	119,204	5,500	12,108,430	155,863	4 78	12.9
	1905	32,536	11,042,360	279,975	5,845	11,328,180	144,265	4 43	12.7
Bancroft	Vill.	529	85,385	17,690	200	103,275	2,515	4 75	24.4
Madoc	"	1,079	327,696	37,006	5,811	370,513	7,410	6 87	20.0
Marmora	"	752	242,558	30,617	5,166	278,341	3,957	5 26	14.2
Stirling	"	857	206,179	34,723	5,513	246,415	4,953	5 78	20.1
Tweed	"	1,347	497,321	47,060	1,700	546,081	6,864	5 10	12.6
Deseronto	Tn.	3,111	929,345	163,300	21,268	1,113,913	23,392	7 52	21.0
Totals	1906	7,675	2,288,484	330,396	39,658	2,658,538	49,091	6 40	18 5
	1905	7,799	2,268,984	305,215	46,452	2,620,651	48,558	6 23	18.5
*Trenton	1906	4,369	1,146,692	98,486	24,412	1,269,590	29,812	6 82	23.5
Tn.	1905	3,417	1,187,595	45,900	2,800	1,236,295	28,557	8 36	23.1
*Belleville,	1906	8,972	3,375,240	421,765	171,879	3,968,884	97,231	10 84	24.4
City.	1905	8,642	3,367,790	336,523	112,297	3,816,610	92,241	10 67	24.2
HURON :									
Ashfield.....	Tp.	2,781	2,503,900	11,250	1,146	2,516,296	17,265	6 21	6.9
Colborne.....	"	1,605	1,336,175	10,225	5,410	1,351,810	10,402	6 48	7.7
Goderich.....	"	2,094	1,733,140	.....	.....	1,733,140	13,709	6 55	7.9
Grey.....	"	3,121	2,808,180	11,970	4,050	2,824,200	26,421	8 47	9.4
Hay	"	3,213	2,306,490	25,825	13,335	2,345,650	19,854	6 18	8.5
Howick.....	"	3,675	2,849,393	19,870	12,260	2,881,523	25,508	6 94	8.9
Hullett	"	2,577	1,985,950	7,700	1,670	1,995,320	19,825	7 69	9.9
McKillop	"	2,330	2,233,600	850	.....	2,234,450	18,768	8 05	8.4
Morris	"	2,272	2,092,720	5,400	600	2,098,720	14,510	6 39	6.9
Stanley	"	1,946	1,987,117	5,680	3,625	1,996,422	16,408	8 43	8.2
Stephen	"	3,797	2,719,070	27,499	1,250	2,747,819	21,921	5 77	8.0
Tuckersmith ..	"	2,121	2,113,566	13,020	14,338	2,140,924	19,005	8 96	8.9
Turnberry	"	1,996	1,319,405	6,502	400	1,326,307	11,928	5 98	9.0
Usborne	"	2,056	2,514,850	6,950	4,435	2,526,235	19,395	9 43	7.7
Wawanosh, E..	"	1,702	1,635,130	4,670	.....	1,639,800	10,135	5 95	6.2
Wawanosh, W.	"	1,883	1,564,044	9,500	.....	1,573,544	11,761	6 25	7.5
Totals	1906	39,169	33,702,730	166,911	62,519	33,932,160	276,815	7 07	8.2
	1905	39,688	31,494,763	164,069	51,033	31,709,865	255,372	6 43	8.1
Bayfield.....	Vill.	467	96,510	8,250	444	105,204	1,789	3 83	17.0
Blyth	"	793	224,981	32,069	7,932	264,982	6,321	7 97	23.9
Brussels.....	"	1,072	335,100	38,785	9,740	383,625	9,088	8 48	23.7
Exeter.....	"	1,578	497,516	49,238	3,520	550,274	11,953	7 57	21.7
Hensall	"	825	267,755	27,780	16,450	311,985	4,957	6 01	15.9
Wroxeter	"	421	146,258	12,825	3,920	163,003	1,480	3 52	9.1
Clinton	Tn	2,435	664,295	72,723	8,050	745,068	17,273	7 09	23.2
Goderich.....	"	4,416	1,502,680	240,627	83,154	1,826,461	35,984	8 15	19.7
Seaforth	"	2,206	575,750	73,533	21,180	670,463	17,522	7 94	26.1
Wingham	"	2,207	593,355	88,850	3,400	685,605	18,552	8 41	27.1
Totals	1906	16,420	4,904,200	644,680	157,790	5,706,670	124,919	7 61	21.9
	1905	16,384	4,631,404	577,347	150,384	5,359,135	117,732	7 19	22.0

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
KENT:		$	$	$	$	$	$ c.	
Camden.....Tp.	2,190	1,594,007	2,683	.....	1,596,690	19,260	8 79	12.1
Chatham..... "	5,030	3,222,299	14,190	1,600	3,238,089	48,720	9 69	15.0
Dover..... "	4,084	2,265,313	4,896	.....	2,270,209	31,246	7 65	13.8
Harwich..... "	4,730	3,787,047	4,920	400	3,792,367	36,653	7 75	9.7
Howard..... "	2,840	2,439,264	9,625	.....	2,448,889	25,057	8 82	10.2
Orford..... "	2,334	1,740,000	10,250	.....	1,750,250	21,599	9 25	12.3
Raleigh..... "	4,243	2,697,188	3,992	.....	2,701,180	44,006	10 37	16.3
Romney..... "	1,643	928,376	6,400	100	934,876	18,113	11 03	19.4
Tilbury E.... "	2,898	1,681,540	7,475	2,587	1,691,602	41,385	14 28	24.5
Zone..... "	1,101	670,773	16,470	3,075	690,318	8,031	7 29	11.6
Totals {1906	31,093	21,025,807	80,901	7,762	21,114,470	294,070	9 46	13.9
Totals {1905	31,239	21,191,757	74,276	6,675	21,272,708	285,611	9 14	13.4
Thamesville...Vill.	786	219,550	23,755	8,785	252,090	5,264	6 70	20.9
Tilbury..... "	1,227	243,955	28,130	1,862	273,947	9,297	7 58	33.9
Blenheim.....Tn.	1,408	382,325	44,814	9,273	436,412	12,613	8 96	28.9
Bothwell..... "	796	172,175	22,015	5,859	200,049	4,161	5 23	20.8
Dresden..... "	1,777	442,490	39,980	7,596	490,066	12,291	6 92	25.1
Ridgetown.... "	2,157	604,260	74,150	4,850	683,260	16,228	7 52	23.8
Wallaceburg.. "	3,251	637,410	93,863	37,225	768,498	24,067	7 40	31.3
Totals {1906	11,402	2,702,165	326,707	75,450	3,104,322	83,921	7 36	27.0
Totals {1905	11,441	2,688,770	271,858	38,818	2,999,446	82,331	7 20	27.4
*Chatham, {1906	9,699	4,180,752	488,548	116,903	4,786,203	167,832	17 30	35.1
City. {1905	9,629	3,944,820	464,753	103,335	4,512,908	129,478	13 45	28.7
LAMBTON:								
Bosanquet....Tp.	2,537	2,187,032	10,730	3,335	2,201,097	18,912	7 45	8.6
Brooke..... "	3,081	2,441,015	18,518	.....	2,459,533	38,582	12 52	15.7
Dawn..... "	3,210	1,366,590	2,500	.....	1,369,090	28,727	8 95	21.0
Enniskillen... "	4,033	2,630,180	2,200	.....	2,632,380	37,037	9 18	14.1
Euphemia..... "	1,877	1,033,370	9,290	.....	1,042,660	16,507	8 79	15.8
Moore..... "	4,263	2,875,400	41,800	9,675	2,926,875	33,437	7 84	11.4
Plympton..... "	3,140	2,499,162	5,600	.....	2,504,762	27,580	8 78	11.0
Sarnia..... "	1,952	1,224,363	600	400	1,225,363	19,262	9 87	15.7
Sombra..... "	3,954	1,645,690	13,021	.....	1,658,711	27,422	6 94	16.5
Warwick..... "	2,789	2,292,660	3,550	.....	2,296,210	21,259	7 62	9.3
Totals {1906	30,836	20,195,462	107,809	13,410	20,316,681	268,725	8 71	13.2
Totals {1905	31,170	20,010,095	100,865	14,374	20,125,334	254,615	8 17	12.7
Alvinston....Vill.	861	213,365	28,177	7,483	249,025	5,205	6 05	20.9
Arkona..... "	468	103,850	10,325	3,195	117,370	2,043	4 37	17.4
Oil Springs... "	881	308,329	19,878	15,637	343,844	7,043	7 99	20.5
Point Edward. "	848	279,839	5,175	.....	285,014	4,643	5 48	16.3
Thedford..... "	582	112,155	16,540	.....	128,695	2,708	4 65	21.0
Watford..... "	1,189	316,995	33,551	2,509	353,055	8,343	7 02	23.6
Wyoming..... "	689	119,755	16,610	950	137,315	3,683	5 35	26.8
Forest..... Tn.	1,459	404,693	43,380	4,575	452,648	11,963	8 20	26.4
Petrolea..... "	4,637	1,158,255	86,814	53,725	1,298,794	39,893	8 60	30.7
Sarnia..... "	9,308	4,151,571	350,106	79,336	4,581,013	108,375	11 64	23.7
Totals {1906	20,922	7,168,807	610,556	167,410	7,946,773	193,899	9.27	24.4
Totals {1905	20,384	6,964,903	607,926	200,069	7,772,898	188,014	9.22	24.2

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real Property.	Business assessment	Income.	Total.	Total.	Per Head.	Mills on $
		$	$	$	$	$	$ c.	
LANARK :								
Bathurst ..... Tp.	2,026	1,305,287	6,550	3,185	1,315,022	9,242	4 56	7.0
Beckwith .... "	1,535	506,930	3,550	.....	510,480	7,817	5 09	15.3
Burgess N.... "	737	229,460	.....	.....	229,460	3,295	4 47	14.4
Dalhousie, etc. "	1,438	469,430	5,850	200	475,480	6,271	4 36	13.2
Darling ..... "	643	111,132	.....	.....	111,132	2,012	3 13	18.1
Drummond .. "	1,857	726,787	12,080	5,475	744,342	10,439	5 62	14.0
Elmsley N... "	893	644,449	3,655	252	648,356	4,735	5 30	7.3
Lanark..... "	1,649	834,880	7,825	2,916	845,621	7,513	4 56	8.9
Lavant..... "	450	79,944	1,835	800	82,579	2,363	5 25	28.6
Montague .... "	1,779	587,510	.....	.....	587,510	9,802	5 51	16.7
Pakenham ... "	1,564	614,010	12,550	1,400	627,960	9,739	6 23	15.5
Ramsay..... "	1,961	1,387,322	14,682	2,851	1,404,855	12,820	6 54	9.1
Sherbrooke .. "	789	102,820	3,126	.....	105,946	2,172	2 75	20.5
Totals { 1906	17,321	7,599,961	71,703	17,079	7,688,743	88,220	5 09	11 5
Totals { 1905	17,815	6,300,182	51,807	11,698	6,363,687	81,189	4 57	12.8
Lanark .....Vill.	777	207,210	30,820	10,500	248,530	4,614	5 94	18.6
Almonte .....Tn.	2,961	680,265	120,103	28,850	829,218	22,642	7 65	27.3
Carleton Place. "	4,019	944,880	92,488	54,144	1,091,512	26,343	6 55	24.1
Perth ..... "	3,487	1,151,235	122,475	75,456	1,349,166	30,874	8 85	22.9
Totals { 1906	11,244	2,983,590	365,886	168,950	3,518,426	84,473	7 51	24.0
Totals { 1905	11,101	2,992,350	369,603	151,897	3,513,850	78,556	7 08	22.4
*Smith's F'ls { 1906	5,009	1,489,180	121,181	29,666	1,640,027	42,640	8 51	26.0
Tn. { 1905	5,319	1,463,645	126,199	32,285	1,622,129	39,356	7 40	24.3
LEEDS :								
Bastard & B...Tp.	2,495	1,798,619	27,710	.....	1,826,329	13,557	5 43	7.4
Crosby N..... "	998	272,302	1,250	.....	273,552	5,666	5 68	20.7
Crosby S..... "	1,573	722,020	8,290	2,120	732,430	7,566	4 81	10.3
Elizabethtown. "	3,674	1,412,380	12,660	2,350	1,427,390	20,479	5 57	14.3
Elmsley S..... "	699	450,676	3,475	.....	454,151	4,627	6 62	10.2
†Escott Front... "	1,013	419,368	5,675	200	425,243	6,675	6 59	15.7
Kitley .. .. "	1,648	1,011,465	5,196	1,100	1,017,761	9,825	5 96	9.7
Leeds and { F. "	2,584	1,961,821	15,400	800	1,978,021	18,150	7 02	9.2
Lansdowne { R. "	2,264	1,347,359	24,352	5,598	1,377,309	12,277	5 42	8.9
Yonge Fr..... "	1,280	486,875	4,455	2,600	493,930	8,485	6 63	17.2
Y. & Escott Rr. "	1,222	435,455	3,400	200	439,055	7,284	5 96	16.6
Totals... { 1906	19,450	10,318,340	111,863	14,968	10,445,171	114,591	5 89	11.0
Totals... { 1905	19,040	10,361,455	82,794	15,817	10,460,066	105,452	5 54	10.1
Athens .....Vil.	867	193,600	18,143	6,100	217,843	5,446	6 28	25.0
Newboro ..... "	415	88,240	9,530	666	98,436	1,979	4 77	20.1
Westport..... "	784	100,000	24,645	1,687	126,332	4,572	5 83	36.2
Gananoque....Tn.	3,933	1,151,115	148,792	27,625	1,327,532	35,856	9 12	27.0
Totals... { 1906	5,999	1,532,955	201,110	36,078	1,770,143	47,853	7 98	27.0
Totals... { 1905	5,898	1,459,679	191,906	36,813	1,688,398	44,277	7 51	26.2
*Brockville { 1906	8,805	3,204,000	295,575	170,075	3,669,650	101,837	11 57	27.8
Tn. { 1905	8,958	3,300,645	234,425	41,000	3,576,070	97,298	10 86	27.2

† Separated from Yonge Front 1906.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
LENNOX & ADD. :		$	$	$	$	$	$ c.	
Adolphustown. Tp.	537	318,964	.....	1,265	320,229	4,032	7 51	12.6
Amherst Island "	738	349,280	4,200	400	353,880	4,317	5 85	12.2
Camden E..... "	3,891	1,751,780	35,715	7,900	1,795,395	21,417	5 50	11.9
Denbigh, etc... "	1,015	66,696	1,600	.....	68,296	2,476	2 44	36.3
Ernestown .... "	2,836	1,475,675	14,990	2,075	1,492,740	16,737	5 90	11.2
Fr'deric'sb'rg N "	1,410	718,040	.....	.....	718,040	6,969	4 94	9.7
Fr'deric'sb'rg S "	935	721,919	350	.....	722,269	6,941	7 42	9.6
Kaladar, etc... "	1,192	149,219	3,269	.....	152,488	2,634	2 21	17.3
Richmond .... "	2,143	1,001,437	3,121	.....	1,004,558	14,230	6 64	14.2
Sheffield ..... "	1,891	745,472	20,856	.....	766,328	9,518	5 03	12.4
Totals... 1906	16,588	7,298,482	84,101	11,640	7,394,223	89,271	5 38	12.1
Totals... 1905	17,262	7,274,865	72,336	11,483	7,358,684	81,344	4 71	11.1
Bath .....Vill.	381	113,962	7,092	1,090	122,144	2,544	6 68	20.8
Newburgh.... "	474	117,460	8,120	1,178	126,758	2,875	6 07	22.7
Napanee .....Tn.	2,802	977,056	106,085	36,842	1,119,983	27,505	9 82	24.6
Totals... 1906	3,657	1,208,478	121,297	39,110	1,368,885	32,924	9 00	24.1
Totals... 1905	3,771	1,179,328	123,418	39,558	1,342,304	34,683	9 20	25.8
LINCOLN :								
Caistor.....Tp.	1,524	700,885	4,250	.....	705,135	7,557	4 96	10.7
Clinton ..... "	1,735	1,266,077	4,930	215	1,271,222	16,387	9 44	12.9
Gainsborough . "	2,180	1,250,592	13,307	4,470	1,268,369	11,318	5 19	8.9
Grantham..... "	1,976	1,294,625	5,700	2,800	1,303,125	10,506	5 32	8 1
Grimsby N.... "	1,365	871,690	.....	300	871,990	9,319	6 83	10.7
Grimsby S ... "	1,287	664,366	20,102	11,543	696,011	7,354	5 71	10.6
Louth..... "	1,685	789,982	.....	2,400	792,382	12,504	7 42	15.8
Niagara ..... "	1,574	1,114,086	3,489	1,400	1,118,975	10,629	6 75	9.5
Totals... 1906	13,326	7,952,303	51,778	23,128	8,027.209	85,574	6 42	10.7
Totals... 1905	13,739	7,876,350	61,226	23,460	7,961,036	80,133	5 83	10.1
Beamsville ...Vill.	824	214,060	12,700	6,100	232,860	4,758	5 77	20.4
Grimsby..... "	1,031	343,195	23,472	2,300	368,967	10,169	9 86	27.6
Merritton .... "	1,529	648,096	94,855	7,200	750,151	16,054	10 50	21.4
Port Dalhousie "	1,086	319,690	76,226	2,300	398,216	6,347	5 84	15.9
Niagara .....Tn.	1,408	525,670	32,397	1,589	559,656	12,352	8 77	22.1
Totals... 1906	5,878	2,050,711	239,650	19,489	2,309,850	49,680	8 45	21.5
Totals... 1905	5,798	2,069,519	153,928	15,564	2,239,011	48,218	8 32	21.5
*St. Cath'ines City 1906	11,748	4,885.806	620,519	253,635	5,759,960	135,310	11 52	23.5
*St. Cath'ines City 1905	11,181	4,580,081	614,830	44,200	5,239,111	120,262	10 76	23.0
MANITOULIN :								
Assiginack ....Tp.	1,046	243,163	7,500	.....	250,663	4,250	4 06	17.0
Billings..... "	397	80,618	2,286	.....	82,904	1,260	3 17	15.2
Burpee..... "	306	35,832	.....	.....	35,832	1,082	3 54	30.2
Carnarvon .... "	716	123,185	3,500	500	127,185	2,672	3 73	21.0
Cockburn Is... "	274	81,183	6,213	.....	87,396	1,540	5 62	17.6
Gordon ..... "	575	118,075	750	.....	118,825	2,330	4 05	19.6
Howland..... "	1,020	190,241	3,100	.....	193,341	3,358	3 29	17.4
Sandfield ..... "	196	34,640	.....	.....	34,640	1,022	5 21	29.5
Tehkummah .. "	455	93,040	1,500	.....	94,540	2,042	4 49	21.6
Totals... 1906	4,985	999,977	24,849	500	1,025,326	19,556	3 92	19.1
Totals... 1905	5,167	1,000,052	20,130	900	1,021,082	18,800	3 64	18.4

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
MANITOULIN—*Con.*		$	$	$	$	$	$ c.	
Gore Bay .....Tn.	786	155,795	19,735	5,015	180,545	3,833	4 88	21.2
Little Current . "	860	150,225	17,249	1,500	168,974	3,583	4 17	21.2
Totals... 1906	1,646	306,020	36,984	6,515	349,519	7,416	4 51	21.2
Totals... 1905	1,608	304,250	39,195	8,820	352,265	7,292	4 53	20.7
MIDDLESEX :								
Adelaide .....Tp.	1,841	2,025,690	4,955	.....	2,030,645	14,321	7 78	7.1
Biddulph..... "	2,043	1,880,348	4,735	200	1,885,283	14,192	6 95	7.5
Caradoc..... "	3,603	2,469,467	17,900	500	2,487,867	24,787	6 88	10.0
Delaware..... "	1,303	912,735	4,762	150	917,647	10,644	8 17	11.6
Dorchester N.. "	3,326	2,519,981	2,200	.....	2,522,181	24,001	7 22	9 5
Ekfrid ..... "	2,357	2,212,515	10,681	1,000	2,224,196	21,674	9 20	9.7
Lobo ..... "	2,450	2,228,515	5,360	.....	2,233,875	18,143	7 41	8.1
London ..... "	8,110	4,504,315	28,500	17,125	4,549,940	48,213	5 94	10 6
McGillivray ... "	2,512	2,561,530	900	.....	2,562,430	17,718	7 05	6.9
Metcalfe ..... "	1,347	1,341,187	4,670	.....	1,345,857	16,945	12 58	12.6
Mosa ..... "	1,947	1,595,775	3,080	.....	1,598,855	17,166	8 82	10.7
Nissouri W.... "	2,495	2,635,434	17,780	.....	2,653,214	23,673	9 49	8.9
Westminster .. "	4,661	3,761,438	22,515	10,506	3,794,459	35,329	7 58	9.3
Williams E.... "	1,276	1,319,486	2,875	.....	1,322,361	12,938	10 14	9.8
Williams W... "	1,304	1,204,902	2,780	723	1,208,405	10,888	8 35	9 0
Totals... 1906	40,575	33,173,318	133,693	30,204	33,337,215	310,632	7 66	9.3
Totals... 1905	40,970	33,102,708	126,428	20,265	33,249,401	300,280	7 33	9.0
Ailsa Craig ...Vill.	652	143,782	20,102	1,712	165,596	4,349	6 67	26.3
Glencoe ..... "	792	263,135	30,553	3,490	297,178	6,297	7 94	21.2
Lucan. ..... "	816	228,425	31,049	4,125	263,599	5,730	7 02	21.7
Newbury ..... "	402	61,990	9,140	650	71,780	1,476	3 67	20.6
Wardsville ... "	250	100,104	13,300	5,864	119,268	1,214	4 86	10.2
Parkhill.....Tn.	1,358	362,473	41,283	15,672	419,428	10,114	7 45	24.1
Strathroy ..... "	2,754	958,477	108,200	34,730	1,101,407	27,468	9 97	24.9
Totals... 1906	7,024	2,118,386	253,627	66,243	2,438,256	56,648	8 06	23.2
Totals... 1905	7,278	2,158,309	236,722	67,116	2,462,147	56,697	7 79	23.0
*London.... 1906	44,704	18,207,449	2,323,315	911,573	21,442,337	498,400	11 15	23.2
City 1905	43,154	17,671,208	2,153,300	261,210	20,085,718	501,920	11 63	25.0
MUSKOKA :								
Brunel .. ..Tp.	765	120,758	1,980	.....	122,738	2,249	2 94	18.3
Cardwell..... "	416	97,619	.....	.....	97,619	1,572	3 78	16.1
Chaffey ..... "	1,056	161,425	2,460	.....	163,885	3,183	3 01	19.4
Draper ..... "	982	124,773	2,100	982	127,855	2,911	2 96	22.8
McLean, etc... "	746	138,642	6,566	.....	145,208	3,041	4 08	20.9
Macaulay..... "	641	108,970	750	.....	109,720	2,899	4 52	26.4
Medora, etc ... "	924	436,990	750	.....	437,740	8,886	9 62	20.3
Monck ..... "	1,166	298,361	8,237	370	306,968	4,889	4 19	15.9
Morrison..... "	831	84,524	2,250	.....	86,774	2,183	2 63	25.2
Muskoka..... "	599	115,084	450	1,770	117,304	2,812	4 69	24.0
Oakley..... "	316	55,715	87	.....	55,802	1,126	3 56	20.2
Ryde ..... "	521	60,090	250	.....	60,340	1,637	3 14	27.1
Stephenson.... "	1,128	222,685	6,635	300	229,620	3,212	2 85	14.0
Stisted ..... "	639	113,914	1,183	.....	115,097	2,521	3 95	21.9
Watt..... "	917	191,390	5,615	115	197,120	3,239	3 53	16.4
Totals .. 1906	11,647	2,330,940	39,313	3,537	2,373,790	46,360	3 98	19.5
Totals .. 1905	11,858	2,235,355	30,821	4,326	2,270,502	45,669	3 85	20.1

POPULATION. ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head	Mills on $
		$	$	$	$	$	$ c.	
MUSKOKA—*Continued*								
Port Carling..Vill.	317	102,110	5,250	228	107,588	1,782	5 62	16.6
Bracebridge ...Tn.	2,895	621,080	100,047	25,296	746,423	19,450	6 72	26.1
Gravenhurst... "	2,431	378,730	48,340	5,026	432,096	14,776	6 08	34.2
Huntsville .... "	2,332	575,763	76,441	9,349	661,553	17,273	7 41	26.1
Totals... 1906	7,975	1,677,683	230,078	39,899	1,947,660	53,281	6 68	27.4
Totals... 1905	7,826	1,537,157	219,123	40,604	1,796,884	48,270	6 17	26.9
NIPISSING :								
†Blezard .....Tp.	1,111	114,101	.....	.....	114,101	2,168	1 95	19.0
Bonfield ..... "	1,100	115,744	2,610	.....	118,354	3,688	3 35	31.2
Bucke ..... "	138	59,500	.....	.....	59,500	1,453	10 53	24.4
Caldwell ..... "	1,214	169,957	5,189	.....	175,146	4,626	3 81	26.4
Calvin ..... "	487	66,167	.....	500	66,667	1,818	3 73	27.3
Cameron ..... "	52	31,920	.....	.....	31,920	474	9 12	14.8
†Coleman..... "	1,563	490,500	51,477	148,670	690,647	12,598	8 06	18.2
Dymond ..... "	430	102,478	885	.....	103,363	3,511	8 17	34.0
Evanturel ..... "	171	81,725	1,775	.....	83,500	1,382	8 08	16.6
Ferris..... "	963	175,434	2,052	.....	177,486	2,791	2 90	15.7
†Hagar ..... "	218	38,562	.....	.....	38,562	868	3 98	22.5
Hanmer ..... "	627	45,308	.....	.....	45,308	1,846	2 94	40.7
Harley..... "	285	117,150	.....	.....	117,150	1,870	6 56	16.0
Hudson..... "	192	46,065	500	.....	46,565	1,269	6 61	27.3
Kerns..... "	307	101,295	1,845	.....	103,140	1,979	6 45	19.2
McKinn ..... "	204	190,914	.....	.....	190,914	3,302	16 19	17.3
†Martland..... "	85	31,599	2,930	.....	34,529	500	5 88	14.5
Mattawan ..... "	162	25,075	.....	.....	25,075	331	2 04	13.2
Neelon..... "	193	32,986	.....	.....	32,986	1,236	6 40	37.5
Papineau..... "	677	58,820	.....	.....	58,820	942	1 39	16.0
Ratter and D.. "	1,083	178,980	12,256	4,182	195,418	3,161	2 92	16.2
Springer ..... "	1,088	235,558	.....	.....	235,558	3,340	3 07	14.2
Widdifield .... "	1,335	138,315	3,050	4,437	145,802	4,745	3 55	32.5
Totals.. 1906	13,685	2,648,153	84,569	157,789	2,890,511	59,898	4 38	20.7
Totals.. 1905	11,403	1,696,144	16,262	100	1,712,506	40,045	3 51	23.4
Bonfield .....Tn.	513	31,597	7,435	.....	39,032	1,333	2 60	34.2
Cache Bay .... "	736	117,430	24,521	.....	141,951	2,522	3 43	17.8
Copper Cliff. . "	2,295	343,730	100,870	44,400	489,000	10,758	4 69	22.0
Haileybury ... "	1,228	403,154	41,303	.....	444,457	8,889	7 24	20.0
Mattawa ..... "	1,478	243,014	26,968	8,295	278,277	9,350	6 33	33.6
New Liskeard.. "	1,473	364,953	20,143	.....	385,096	13,007	8 83	33.8
North Bay .... "	4,753	1,273,709	121,974	118,291	1,513,974	35,763	7 52	23 6
Sturgeon Falls. "	2,640	1,577,222	557,710	10,100	2,145,032	33,450	12 67	15.6
Sudbury ..... "	3,209	673,000	81,974	.....	754,974	24,192	7 54	32.0
Totals... 1906	18,325	5,027,809	982,898	181,086	6,191,793	139,264	7 60	22.5
Totals... 1905	14,650	3,873,008	694,355	193,547	4,760,910	109,323	7 46	23.0
NORFOLK :								
Charlotteville .Tp.	2,936	1,305,233	18,220	6,253	1,329,706	14,677	5 00	11.0
Houghton..... "	1,829	492,850	3,625	.....	496,475	8,834	4 83	17.8
Middleton..... "	2,370	971,613	7,685	1,086	980,384	13,020	5 49	13.3
Townsend..... "	3,287	2,592,530	10,250	6,146	2,608,926	20,384	6 20	7.8
Walsingham N. "	1,957	736,400	9,165	138	745,703	10,138	5 18	13.6

† Organized 1906.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
NORFOLK—*Con.*								
Walsingham S. Tp.	1,806	872,647	7,385	80	880,112	12,481	6 91	14.2
Windham ..... "	3,582	1,717,965	17,491	3,188	1,738,644	19,898	5 55	11.4
Woodhouse.... "	1,761	1,566,605	9,210	6,635	1,582,450	10,192	5 79	6.4
Totals... 1906	19,528	10,255,843	83,031	23,526	10,362,400	109,621	5 61	10 6
Totals... 1905	19,786	10,295,997	87,671	25,365	10,409,033	103,753	5 24	10.0
Delhi Vill	741	178,575	28,320	2,314	209,209	3,995	5 39	19.1
Port Dover ... "	1,033	344,790	33,602	10,108	388,500	9,771	9 46	25.2
Port Rowan... "	590	175,982	14,005	3,566	193,553	4,610	7 81	23.9
Waterford .... "	1,070	250,200	25,636	10,600	286,136	7,209	6 74	25.2
Simcoe ..... Tn.	3,104	918,250	131,007	53,898	1,103,155	25,960	8 36	23.5
Totals... 1906	6,538	1,867,797	232,570	80,486	2,180,853	51,545	7 88	23.6
Totals... 1905	6,540	1,822,765	224,285	80,660	2,127,710	47,618	7 29	22.1
NORTHUMBERLAND:								
Alnwick ..... Tp.	889	449,990	6,860	.....	456,850	4,290	4 83	9.4
Brighton ..... "	2,345	1,220,805	1,000	300	1,222,105	13,603	5 80	11.1
Cramahe ..... "	2,323	1,079,749	11,405	1,466	1,092,620	13,461	5 79	12.3
Haldimand.... "	3,459	1,510,840	4,510	800	1,546,150	19,647	5 68	12.7
Hamilton..... "	3,538	2,068,270	13,825	4,500	2,086,595	23,172	6 55	11.1
Monaghan S... "	685	660,860	1,190	.....	662,050	5,162	7 54	7.8
Murray ..... "	2,586	1,161,525	4,450	7,000	1,172,975	13,062	5 05	11.1
Percy ..... "	2,736	972,255	21,166	.....	993,421	13,505	4 94	13.6
Seymour ..... "	2,964	1,113,355	12,206	.....	1,125,561	16,733	5 65	14.9
Totals... 1906	21,525	10,267,649	76,612	14,066	10,358,327	122,635	5 70	11.8
Totals... 1905	21,792	10,255,824	74,295	13,102	10,343,221	108,338	4 97	10.5
Brighton..... Vill.	1,242	501,642	25,542	.....	527,184	10,506	8 16	19.9
Colborne ..... "	1,043	304,290	28,710	3,068	336,068	6,766	6 49	20.1
Hastings ..... "	833	166,633	25,535	1,400	193,568	4,002	4 80	20.7
Campbellford..Tn.	2,462	696,012	83,260	14,200	793,472	15,868	6 45	20.0
Cobourg .... "	5,159	1,430,497	195,909	31,600	1,658,006	47,714	9 25	28.8
Totals... 1906	10,739	3,099,074	358,956	50,268	3,508,298	84,856	7 90	24.2
Totals... 1905	9,933	3,098,684	278,305	47,934	3,424,923	80,727	8 13	23.6
ONTARIO:								
Brock..... Tp.	3,390	2,719,806	16,188	.....	2,735,994	17,260	5.09	6.3
Mara..... "	2,804	1,633,630	15,002	1,700	1,650,332	13,276	4.73	8.0
Pickering..... "	4,874	3,288,471	49,780	16,280	3,354,531	34,619	7.10	10.3
Rama ..... "	1,131	215 834	7.049	341	223 224	4,795	4.23	21.5
Reach..... "	3,164	1,995,020	9,500	200	2,004 720	18,483	5.84	9.2
Scott ..... "	1 978	1,378,050	1,950	2,500	1,382 500	10,834	5.48	7.8
Scugog .. .. "	491	285,065	250	.....	285,315	2,352	4.79	8.2
Thorah..... "	1,256	1,158,597	4,630	.....	1,163.227	7,654	6 09	6.6
Uxbridge..... "	2,468	988,305	4,900	.....	993,205	11,676	4.73	11.8
Whitby E..... "	2,594	1,631,850	22,210	3,400	1 657,460	14,063	5.42	8.5
Whitby ..... "	1,777	1,501,441	9,672	5,250	1,516,363	13,789	7.76	9.1
Totals... 1906	25,930	16,796,069	141,131	29,671	16,966,871	148,801	5.74	8.8
Totals... 1905	26,433	16,775,923	141,727	28,256	16,945,906	143,091	5.41	8.4
Beaverton....Vill.	966	277,832	24,180	2,000	304,012	4,038	4.18	13.3
Cannington .. "	981	314,490	40,877	6,900	362,267	5,468	5.57	15.1

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
ONTARIO.—*Con.*		$	$	$	$	$	$ c.	$ c.
Port Perry ... Vill	1,300	421,115	61,928	9,066	492,109	14,129	10.87	28.7
Oshawa ..... Tn.	5,585	1,445,830	242,595	77,617	1,766,042	46,305	8.29	26.2
Uxbridge .... "	1,620	435,005	51,371	5,870	492,246	12,824	7.92	26.1
Whitby ..... "	2,282	854,659	48,270	24,245	927,174	22,005	9.64	23.7
Totals... 1906	12,734	3,748,931	469,221	125,698	4,343,850	104,769	8.23	24.1
1905	12,130	3,504,491	283,382	69,485	3,857,358	94,825	7.82	24.6
OXFORD:								
Blandford.... Tp.	1,508	1,231,281	7,100	5,635	1,244,016	10,056	6.67	8.1
Blenheim .... "	4,093	3,110,383	34,000	700	3,145,083	25,760	6.29	8.2
Dereham..... "	3,445	3,173,729	24,887	500	3,199,116	29,241	8.49	9.1
Nissouri E... "	2,413	2,740,355	22,335	6,078	2,768,768	16,780	6.95	6.1
Norwich N... "	2,025	1,657,650	9,250	5,150	1,672,050	19,064	9.41	11.4
Norwich S... "	1,985	1,128,816	12,739	4,700	1,146,255	13,419	6.76	11.7
Oxford E..... "	1,983	1,510,127	10,230	5,916	1,526,273	14,490	7.31	9.5
Oxford N..... "	1,136	1,102,963	7,680	2,920	1,113,563	8,041	7.08	7.2
Oxford W.... "	1,949	1,400,722	13,917	2,425	1,417,064	11,764	6.04	8.3
Zorra E..... "	3,732	4,011,817	34,335	3,500	4,049,652	31,274	8.38	7.7
Zorra W..... "	2,497	2,919,875	2,000	300	2,922,175	20,099	8.05	6.9
Totals... 1906	26,766	23,987,718	178,473	37,824	24,204,015	199,988	7.47	8.3
1905	26,914	23,735,088	155,568	31,196	23,921,852	190,972	7.10	8.0
Embro ..... Vill.	558	188,450	17,085	500	206,035	4,121	7.39	20.0
Norwich ..... "	1,164	306,145	33,850	22,430	362,425	10,215	8.78	28.2
Ingersoll .... Tn.	4,756	1,598,625	187,035	65,446	1,851,106	43,432	9.13	23 5
Tillsonburg .. "	2,227	937,065	102,090	39,582	1,078,737	24,247	10.89	22.5
Totals... 1906	8,705	3,030,285	340,060	127,958	3,498,303	82,015	9.42	23.4
1905	8,668	2,934,652	183,325	52,833	3,170,810	80,378	9.27	25.3
* Woodstock City 1906	9,422	3,601,860	339,938	180,964	4,122,762	86,522	9.18	21.0
1905	9,209	2,981,275	168,900	54,050	3,204,225	81,279	8.83	25.4
PARRY SOUND:								
Armour ..... Tp.	986	207,625	4,197	100	211,922	3,910	3.97	18.5
Carling ..... "	263	48,840	.....	.....	48,840	1,535	5.84	31.4
Chapman ..... "	722	149,870	7,773	55	157,698	2,792	3.87	17.7
Christie ..... "	470	78,281	3,022	200	81,503	1,835	3.90	22.5
Foley ..... "	613	113,888	2,125	.....	116,013	1,403	2.29	12.1
Hagerman .... "	425	54,046	1,927	.....	55,973	1,632	3.84	29.2
Himsworth N. "	651	83,899	10,500	1,050	95,449	2,469	3.79	25.9
Himsworth S.. "	1,192	171,406	6,222	.....	177,628	3,947	3.31	22.2
Humphrey.... "	660	291,007	18,415	.....	309,422	3,238	4.91	10.5
Joly ..... "	303	57,680	250	.....	57,930	818	2.70	14.1
McDougall .... "	558	92,203	.....	.....	92,203	2,047	3.67	22.2
McKellar ..... "	578	72,311	395	.....	72,706	2,073	3.59	28.5
McMurrich.... "	770	139,032	3,295	.....	142,327	2,068	2.69	14.5
Machar ..... "	759	108,357	5,250	.....	113,607	3,847	5.07	33.9
Nipissing..... "	626	112,770	2,260	.....	115,030	1,553	2.48	13.5
Perry ..... "	1,396	239,644	20,065	1,100	260,809	4,584	3.28	17.6
Ryerson..... "	714	178,824	780	.....	179,604	2,873	4.02	16.0
Strong ..... "	744	152,995	1,000	.....	153,995	2,777	3.73	18.0
Totals... 1906	12,430	2,352,678	87,476	2,505	2,442,659	45,401	3.65	18.6
1905	12,391	2,329,469	83,666	3,397	2,416,532	44,336	3.58	18.3

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
PARRY SOUND.—*Con.*		$	$	$	$	$	$ c.	
Burk's Falls..Vill.	1,009	179,873	39,491	4,330	223,694	6,031	5.98	27.0
Sundridge.... "	431	57,286	11,838	.....	69,124	1,807	4.19	26.1
Parry Sound..Tn.	3,496	1,279,418	147,324	9,926	1,436,668	26,636	7.62	18.5
Powassan .... "	604	110,427	16,428	970	127,825	2,595	4.30	20.3
Totals. . {1906	5,540	1,627,004	215,081	15,226	1,857,311	37,069	6.69	20.0
{1905	4,674	1,083,362	180,722	17,747	1,281,831	30,330	6.49	23.7
PEEL:								
Albion ..... .Tp.	2,426	1,625,000	7,200	.....	1,632,200	14,999	6.18	9.0
Caledon..... "	3,702	1,772,370	28,550	2,400	1,803,320	20,372	5.50	11.3
Chinguacousy.. "	3,510	3,951,467	16,031	11,730	3,979,228	23,402	6.67	5.9
Toronto ..... "	4,783	2,915,150	35,875	2,300	2,953,325	29,096	6.08	9.9
Toronto Gore.. "	859	793,640	1,880	300	795,820	7,865	9.16	9.9
Totals .. {1906	15,280	11,057,627	89,536	16,730	11,163,893	95,734	6.27	8.6
{1905	15,174	10,995,840	94,826	13,158	11,103,824	86,335	5.69	7.8
Bolton .....Vill.	633	220,160	19,340	12,140	251,640	3,898	6.16	15.5
Streetsville ... "	552	153,860	14,227	1,000	169,087	3,117	5.65	18.4
Brampton .....Tn.	3,103	1,071,660	85,501	76,066	1,233,227	27,866	8.98	22.6
Totals... {1906	4,288	1,445,680	119,068	89,206	1,653,954	31,881	8.13	21 1
{1905	3,903	1,379,541	118,616	68,135	1,566,292	32,604	8.35	20.8
PERTH:								
Blanshard.....Tp.	2,291	2,496,700	6,500	1,250	2,504,450	18,462	8.06	7.4
Downie ..... '	2,568	2,714,510	1,450	.....	2,715,960	20,163	7.85	7.4
Easthope N.... '	2,043	2,406,786	2,905	.....	2,409,691	14,155	6.93	5.9
Easthope S. ... "	1,900	1,845,722	45,871	8,606	1,900,199	11,486	6.05	6.0
Ellice ..... "	3,010	2,461,567	.....	.....	2,461,567	25,062	8.33	10.2
Elma ..... "	3,542	3,453,868	33,130	7,144	3,494,142	28,677	8.10	8.2
Fullarton..... "	2,041	2,284,160	4,400	350	2,288,910	15,904	7.79	6.9
Hibbert ..... "	2,099	1,789,483	10,250	5,688	1,805,421	17,477	8.33	9.7
Logan ..... "	2,725	2,677,725	4,294	4,557	2,686,576	22,841	8.38	8.5
Mornington ... "	2,802	2,259,446	14,275	3,345	2,277,066	23,397	8.35	10.3
Wallace ..... "	2,531	1,978,350	3,595	.....	1,981,945	13,825	5.46	7.0
Totals... {1906	27,552	26,368,317	126,670	30,940	26,525,927	211,449	7.67	8.0
{1905	28,005	26,496,482	138,240	33,646	26,668,368	202,015	7.21	7.6
Milverton ....Vill.	835	290,350	23,900	10,450	324,700	5,789	6.93	17.8
Listowel..... Tn.	2,367	783,165	93,480	13,243	889,888	20,257	8.56	22.8
Mitchell .....Vill.	1,885	650,848	73,682	29,097	753,627	17,953	9.52	23.8
Totals... {1906	5,087	1,724,363	191,062	52,790	1,968,215	43,999	8.65	22.4
{1905	4,778	1,655,293	198,572	37,520	1,891,385	45,174	9.45	23.4
*St. Marys.. {1906	3,374	1,343,795	112,615	36,685	1,493,095	35,837	10.62	24.0
Town. {1905	3,127	1,323,055	116,010	37,145	1,476,210	33,245	9.70	22.5
*Stratford... {1906	13,219	4,991,465	574,790	217,580	5,783,835	118,212	11.21	25.6
City {1905	12,827	4,040,385	184,350	70,300	4,295,035	118,680	9.25	27.6
PETERBOROUGH:								
Asphodel.....Tp.	1,574	880,971	3,720	.....	884,691	10,221	6.49	11.6
Belmont and M. "	1,802	230,101	1,500	.....	231,601	7,596	4.22	32.8

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
PETERBOROUGH—*Con.*								
Burleigh and A. Tp.	607	105,633	4,950	.....	110,583	3,083	5.08	27.9
Chandos ..... "	642	84,281	1,750	.....	86,031	3,005	4.68	34.9
Douro ..... "	1,639	811,978	1,945	.....	813,923	8,439	5.15	10.4
Dummer ..... "	1,623	623,835	.....	.....	623,835	7,583	4.67	12.2
Ennismore .... "	854	355,000	390	.....	355,390	3,610	4.23	10.2
Galway and C.. "	988	55,521	200	.....	55,721	1,496	1.51	26.8
Harvey ..... "	1,010	219,307	396	.....	219,703	4,345	4.30	19.8
Monaghan N.. "	947	630,668	.....	.....	630,668	5,302	5.60	8.4
Otonabee ..... "	2,885	2,001,729	8,950	.....	2,010,679	19,923	6.91	9.9
Smith..... "	2,518	1,597,465	.....	.....	1,597,465	15,762	6.26	9.9
Totals... 1906	17,089	7,596,489	23,801	.....	7,620,290	90,365	5.29	11.9
Totals... 1905	17,228	7,614,283	20,490	500	7,635,273	82,326	4.78	10.8
Havelock .... Vill.	1,199	154,794	14,140	4,984	173,918	4,963	4.14	28.5
Lakefield..... "	1,435	423,550	67,225	6,200	496,975	7,092	4.94	14.3
Norwood .... "	896	223,940	20,642	1,865	246,447	5,926	6.61	24.0
Totals... 1906	3,530	802,284	102,007	13,049	917,340	17,981	5.09	19.6
Totals... 1905	3,312	769,591	99,921	10,740	880,252	16,432	4.96	18.7
Peterboro' 1906	14,962	5,925,335	695,363	109,512	6,660,210	125,653	8.40	18.9
City. 1905	14,391	5,364,864	418,950	90,450	5,874,264	114,601	7.96	19.5
PRESCOTT:								
Alfred.....Tp.	3,225	1,370,475	22,538	5,560	1,398,573	9,190	2.85	6.6
Caledonia ..... "	1,582	1,090,191	16,815	330	1,107,336	7,926	5.01	7.2
Hawkesbury E. "	4,172	445,725	2,150	.....	447,875	13,349	3.20	29.8
Hawkesbury W."	1,393	265,594	.....	.....	265,594	9,575	6.87	36.1
Longueuil..... "	944	540,245	.....	.....	540,245	3,091	3.27	5.7
Plantagenet N. "	3,891	1,290,568	33,684	6,871	1,331,123	15,339	3.94	11.5
Plantagenet S. "	3,191	962,050	16,925	5,300	984,275	11,962	3.75	12.2
Totals... 1906	18,398	5,964,848	92,112	18,061	6,075,021	70,432	3.83	11.6
Totals... 1905	18,751	4,640,434	54,190	14,332	4,708,956	67,076	3.58	14.2
L'Orignal.....Vill.	1,179	362,667	17,295	13,987	393,949	3,005	2.55	7.6
Hawkesbury...Tn.	4,551	521,444	66,892	3,200	591,536	17,547	3.86	29.7
Vankleek Hill. "	1,358	450,254	29,085	4,800	484,139	9,975	7.35	20.6
Totals... 1906	7,088	1,334,365	113,272	21,987	1,469,624	30,527	4.31	20.8
Totals... 1905	7,217	1,188,017	133,395	18,734	1,340,146	31,636	4.38	23.6
PRINCE EDWARD:								
Ameliasburg...Tp.	2,429	1,267,940	.....	.....	1,267,940	14,646	6.03	11.6
Athol ..... "	1,101	455,800	.....	.....	455,800	5,105	4.64	11.2
Hallowell ..... "	2,979	1,245,477	12,440	700	1,258,617	12,524	4.20	10.0
Hillier..... "	1,281	894,405	9,200	.....	903,605	8,324	6.50	9.2
Marysburgh N. "	1,042	475,875	9,750	500	486,125	5,539	5.32	11.4
Marysburgh S. "	1,102	540,905	585	700	542,190	5,806	5 27	10.7
Sophiasburg ... "	1,657	1,000,745	.....	.....	1,000,745	9,577	5.78	9.6
Totals... 1906	11,591	5,881,147	31,975	1,900	5,915,022	61,521	5.31	10.4
Totals... 1905	11,532	5,819,737	27,220	1,800	5,848,757	58,421	5.07	10.0

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
PRINCE EDWARD—*Con.*								
Wellington ..Vill.	681	231,292	4,450	200	235,942	2,744	4 03	11.6
Picton .....Tn.	3,834	1,334,105	142,095	26,300	1,502,500	30,650	7 99	20.4
Totals... 1906	4,515	1,565,397	146,545	26,500	1,738,442	33,394	7 40	19.2
Totals... 1905	4,390	1,512,742	132,727	23,400	1,668,869	29,620	6 75	17.7
RAINY RIVER:								
Alberton .....Tp.	170	100,644	.....	.....	100,641	2,084	12 26	20.7
Atwood ..... "	180	74,190	.....	.....	74,190	1,843	10 24	24.8
Chapple..... "	843	284,501	2,275	200	286,976	4,081	4 84	14.2
Emo ..... "	742	255,377	6,400	1,025	262,802	5,044	6 80	19.2
Keewatin ..... "	1,102	323,060	67,939	20,455	411,454	8,920	8 09	31.7
LaVallee. .... "	662	284,489	1,398	.....	285,887	4,373	6 61	15.3
McIrvine..... "	34	95,769	.....	.....	95,769	1,274	37 47	13.3
Morley..... "	349	114,660	4,181	.....	118,844	2,545	7 29	21.4
Van Horne ... "	312	108,631	5,705	.....	114,336	1,551	4 98	13.6
†W'rthingt'n&B. "	243	139,573	.....	.....	139,573	1,390	5 72	10.0
Totals... 1906	4,637	1,780,894	87,901	21,680	1,890,475	33,108	7 14	17.5
Totals... 1905	4,260	1,623,732	43,026	1,585	1,668,343	27,747	6 51	16.6
Fort Frances...Tn.	1,174	803,404	31,100	3,440	837,944	20,466	17 43	24.4
Kenora ..... "	5,044	1,482,620	164,307	184,508	1,831,435	48,908	9 70	26.7
Rainy River... "	1,430	607,708	27,619	.....	635,327	15,973	11 17	25.1
Totals... 1906	7,648	2,893,732	223,026	187,948	3,304,706	85,347	11 16	25.8
Totals... 1905	6,129	2,922,400	204,943	144,778	3,272,121	72,009	11 75	22.0
RENFREW:								
Admaston .....Tp.	2,052	781,565	1,875	.....	783,440	7,045	3 43	9.0
Algona S..... "	896	129,470	.....	.....	129,470	1,778	1 98	13.7
Alice and F.... "	2,029	573,261	.....	.....	573,261	5,243	2 58	9.1
Bagot and B... "	1,309	150,313	3,725	200	154,238	4,233	3 23	27.4
Bromley ..... "	1,982	1,353,865	12,334	1,700	1,367,899	8,038	4 06	5.9
Brougham .... "	470	70,815	651	.....	71,466	1,018	2 17	14.2
Brudenell & L. "	1,297	185,335	4,750	.....	190,085	3,234	2 49	17.0
Grattan. ..... "	1,923	341,075	3,150	.....	344,225	3,989	2 07	11.6
Griffith and M. "	632	59,400	1,250	.....	60,650	1,300	2 06	21.4
Hagarty, etc... "	2,897	406,875	16,680	.....	423,555	5,551	1 92	13.1
Head, etc ..... "	312	82,539	.....	.....	82,539	1,380	4 42	16.7
Horton..... "	1 373	530,484	500	.....	530,984	4,432	3 23	8.3
McNab..... "	3,388	1,116,145	40,669	8.730	1,165,544	14,553	4 30	12.5
Pembroke..... "	951	320,564	130	500	321,194	2,369	2 49	7.4
Petewawa ..... "	967	83.635	.....	.....	83,635	1,499	1 55	17.9
Radcliffe ..... "	368	12,035	2,215	.....	44,250	1,189	3 23	26.9
Raglan..... "	722	59,225	.....	.....	59,225	2,831	3 87	47.8
Rolph, etc..... "	1,006	181,532	3,007	2,306	186,845	2,859	2 84	15.3
Ross .. .. "	1,945	885,725	1,050	300	887,075	8,374	4 31	9.4
Sebastopol .... "	649	55,465	250	.....	55,715	1,504	2 32	27.0
Stafford ..... "	1,035	725,335	1,325	.....	726,660	3,599	3 48	5.0
Westmeath.... "	3.208	1,727,380	11,505	.....	1,738,885	13,887	4 33	8.0
Wilberforce,etc. "	2,379	664,913	1,915	.....	669,828	6,344	2 67	9.5
Totals... 1906	33,800	10,526,951	109,981	13,736	10,650,668	106,249	3 14	10.
Totals... 1905	34,260	10,263,129	109,107	18,322	10,390,558	100,823	2 94	9.

† Organized 1906.

POPULATION, ASSESSMENT AND TAXATION—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mil s on $
RENFREW—*Con.*		$	$	$	$	$	$ c.	
Cobden ..... Vill.	783	295,375	21,883	6,419	323,677	3,711	4 74	11.5
Eganville..... "	1,098	277,675	44,320	6,900	328,895	6,189	5 64	18.8
Arnprior ..... Tn.	4,264	964,683	92,564	40,530	1,097,777	31,374	7 36	28.6
Pembroke..... "	5,807	2,071,175	222,955	75,080	2,369,210	42,041	7 24	17.7
Renfrew ..... "	3,305	1,068,014	143,643	15,836	1,227,493	24,885	7 53	20.3
Totals... 1906	15,257	4,676,922	525,365	144,765	5,347,052	108,200	7 09	20.2
Totals... 1905	14,403	4,642,090	523,702	170,314	5,336,106	107,865	7 49	20.2
RUSSELL :								
Cambridge ....Tp.	3,136	1,282,689	.....	.....	1,282,689	14,932	4 76	11.6
Clarence ..... "	5,274	1,106,481	.....	.....	1,106 481	17,961	3 41	16.2
Cumberland... "	3,457	445,393	3,585	.....	448,978	19,166	5 54	42.7
Russell..... "	2,975	1,608,288	11,457	1,250	1,620,995	17,457	5 87	10.8
Totals... 1906	14,842	4,442,851	15,042	1,250	4,459,143	69.516	4 68	15.6
Totals... 1905	14,991	2,719,484	11,465	.....	2,730,949	67,411	4 50	24.7
Casselman....Vill.	636	105,233	7,044	.....	112,277	2,075	3 26	18.5
Rockland..... "	2,675	134,345	.....	.....	134,345	9,130	3 41	67.9
Totals... 1906	3,311	239.578	7,044	.....	246,622	11.205	3 38	45.4
Totals... 1905	2,506	167,085	593	800	168,478	8,479	3 38	50 3
SIMCOE :								
Adjala .....Tp.	2,084	834,250	3,550	800	838,600	12,806	6 14	15.3
Essa ..... "	4,033	1,323,244	8,400	3,500	1,335,144	18,209	4 52	13.6
Flos ..... "	3,242	1,674,935	31,430	2,835	1,709,200	20,248	6 25	11.8
Gwillimbury W. "	2,232	1,124,410	6,200	.....	1,130,610	12,114	5 43	10.7
Innisfil ..... "	3,241	1,683,116	6,550	.....	1,689,666	20,734	6 40	12.3
Matchedash. .. "	444	152,110	400	.....	152,510	1,648	3 71	10.8
Medonte ..... "	3,615	1,200,159	38,700	22,445	1,261,304	20,476	5 66	16.2
Nottawasaga .. "	4,600	2,574,484	11,800	1,675	2,587,959	27,635	6 01	10.7
Orillia ..... "	3,863	599,513	16,560	2,700	618,773	17,173	4 45	27.8
Oro. ..... "	3,508	1,567,281	3,742	.....	1,571,023	16,288	4 64	10.4
Sunnidale ..... "	2,078	864,126	5,070	.....	869,196	10,644	5 12	12.2
Tay..... "	5,478	1,392,050	89,655	8,850	1,490,555	14,481	2 64	9.7
Tecumseth .... "	3,151	1,694,557	7,900	6,007	1,708,464	21,261	6 75	12.4
Tiny..... "	4.021	1,040,700	6,000	.....	1,046,700	16,778	4 17	16.0
Tossorontio ... "	1,582	713,853	1,525	50	715,428	8,406	5 31	11.7
Vespra. ..... "	2,544	1,146,805	9,000	200	1,156,005	13,433	5 28	11.6
Totals... 1906	49,716	19,585,593	246,482	49,062	19,881,137	252,334	5 08	12.7
Totals... 1905	50,069	20,273,619	259,178	60.611	20,593,408	240,999	4 81	11.7
Beeton. .....Vill.	752	161,390	19,572	5,274	186,236	4,928	6 55	26.5
Bradford .... "	996	243,395	24,315	7,596	275,306	6,402	6 43	23.3
Creemore..... "	687	165,975	25,219	4,555	195,749	4,294	6 25	21.9
Tottenham ... "	550	152,965	17,675	800	171,440	4,041	7 35	23.6
Alliston .....Tn.	1,439	359,618	36,438	5,482	401,538	9,981	6 94	24.9
Barrie ..... "	6,706	2,653,420	273,420	87,158	3,013,998	55,089	8 21	18.3
Collingwood... "	7,010	2,349,915	350,997	47,466	2,748,378	67,900	9 69	24.7
Midland ..... "	3,900	1,102,565	121,743	75,182	1,299,490	34,717	8 90	26.7
Orillia ..... "	5,379	1,494,475	182,405	47,238	1,724,118	43,706	8 13	25.3
Penetang..... "	2,917	668,690	116,086	5,810	790,586	22,461	7 70	28.4
Stayner..... "	1,115	285,965	28,486	4,544	318,995	6,705	6 01	21 0
Totals... 1906	31,451	9,638,373	1,196,356	291,105	11,125.834	260,224	8 27	23.4
Totals... 1905	30,305	9,030,240	1,052,063	197,702	10,280,005	238,338	7 86	23.2

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
STORMONT:								
Cornwall.....Tp.	5,789	1,226,001	.....	.....	1,226,001	25,413	4 39	20.7
Finch..... "	2,901	1,186,550	10,700	.....	1,197,250	21,766	7 50	18.2
Osnabruck .... "	4,481	2,050,205	24,759	4,537	2,079,501	25,942	5 79	12.5
Roxborough... "	4,080	1,690,311	34,334	.....	1,724,645	37,275	9 14	21.6
Totals... 1906	17,251	6,153,067	69,793	4,537	6,227,397	110,396	6 40	17.7
Totals... 1905	18,311	6,144,753	78,130	11,328	6,234,211	89,813	4 91	14.4
Finch.....Vill.	340	80,602	8,050	.....	88,652	1,358	3 99	15.3
Cornwall.....Tn.	5,891	1,867,955	124,677	44,420	2,037,052	49,090	8 33	24.1
Totals... 1906	6,231	1,948,557	132,727	44,420	2,125,704	50,448	8 10	23.7
Totals... 1905	6,166	2,008,339	139,124	40,086	2,187,549	45,684	7 41	20.9
THUNDER BAY:								
Neebing.....Tp.	34	288,225	350	.....	288,575	4,337	127 56	15.0
Oliver ..... "	451	197,295	600	.....	197,895	3,471	7 70	17.5
Paipoonge..... "	290	186,713	.....	.....	186,713	5,115	17 64	27.4
Schreiber ..... "	575	103,125	.....	73,740	176,865	3,132	5 45	17.7
Shuniah ..... "	246	174,107	.....	.....	174,107	3,782	15 37	21.7
Totals... 1906	1,596	949,465	950	73,740	1,024,155	19,837	12 43	19.4
Totals... 1905	1,570	819,933	514	60,466	880,913	19,070	12 15	21.7
†Fort William.Tn.	10,032	4,781,351	372,701	189,920	5,343,972	99,239	8 89	18.6
†Port Arthur .. "	10,206	4,683,034	310,825	31,100	5,024,959	77,223	7 57	15 3
Totals... 1906	20,238	9,464,385	683,526	221,020	10,368,931	176,462	8 72	17.0
Totals... 1905	14,452	6,446,974	311,279	23,600	6,781,853	126,553	8 76	18.7
VICTORIA:								
Bexley.....Tp.	819	223,559	20,342	.....	243,901	4,606	5 62	18.9
Carden..... "	690	238,764	.....	.....	238,764	3,448	5 00	14.4
Dalton ..... "	469	50.425	75	.....	50,500	1,620	3 45	32.1
Eldon..... "	2,475	1,698,086	15,475	.....	1,713,561	12,661	5 12	7.4
Emily ..... "	1,991	1,279,781	2,250	250	1,282,281	13,380	6 72	10.4
Fenelon..... "	2,091	776,345	3,850	.....	780,195	10,953	5 24	14.0
Laxton, etc ... "	633	137,073	.....	.....	137,073	3,211	5 07	23.4
Mariposa..... "	3,550	3,449,543	17,550	9,377	3,476,470	28,473	8 02	8.2
Ops. ..... "	2,065	1,692,370	3,275	.....	1,695,645	18,331	8 88	10.8
Somerville .... "	1,783	246,215	9,075	250	255,540	7,935	4 45	31.1
Verulam .... "	1,856	621,858	4,200	.....	626,058	9,817	5 29	15.7
Totals... 1906	18,422	10,414,019	76,092	9,877	10,499,988	114,435	6 21	10.9
Totals... 1905	18,786	10,132,144	69,461	12,701	10,214,306	105,047	5 59	10.3
Bobcaygeon ..Vill.	957	187,991	22,704	4,208	214,903	6,122	6 40	28.5
Fenelon Falls. "	1,349	394,615	57,425	3,855	455,895	7,506	6 01	16.5
Omemee ..... "	605	168,771	18,995	1,425	189,191	2,917	4 82	15.4
Sturgeon Point "	417	27,275	750	68	28,093	618	1 48	22.0
Woodville .... "	431	115,450	10,755	300	126,505	1,800	4 13	14.2
Lindsay.....Tn.	7,186	2,097,735	257,925	31,850	2,387,510	74,305	10 34	31.1
Totals... 1906	10,845	2,991,837	368,554	41,706	3,402,097	93,268	8 60	27.4
Totals... 1905	10,742	2,956,981	287,502	39,763	3,284,246	89,362	8 32	27.2

† Incorporated as cities in 1907.

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$ c.	
WATERLOO:								
Dumfries N....Tp.	2,018	2,021,153	27,700	2,220	2,051,073	14,139	7 01	6.9
Waterloo..... "	6,566	3,917,345	42,485	20,675	3,980,505	33,651	5 13	8.5
Wellesley ..... "	4,563	3,882,008	49,960	22,229	3,954,197	30,296	6 64	7.7
Wilmot ..... "	4,484	2,945,428	51,375	18,283	3,015,086	23,882	5 33	7.9
Woolwich..... "	4,017	2,755,020	32,705	13,770	2,801,495	24,401	6 07	8.7
Totals... (1906	21,648	15,520,954	204,225	77,177	15,802,356	126,369	5 84	8.0
(1905	22,029	14,383,711	187,934	64,605	14,636,250	114,295	5 19	7.8
Ayr .....Vill.	886	259,186	30,072	12,684	301,942	4,831	5 45	16.0
Elmira..... "	1,491	444,930	57,680	20,615	523,225	7,002	4 70	13.4
New Hamburg "	1,308	396,850	46,518	13,802	457,170	9,463	7 23	20.7
Berlin.....Tn.	12,151	4,289,745	502,239	142,525	4,934,509	112,650	9 27	22.8
Galt..... "	8,602	3,544,176	461,738	162,484	4,168,398	85,585	9 95	20.5
Hespeler..... "	2,321	711,275	110,250	14,495	836,020	16,393	7 06	19.6
Preston..... "	2,711	865,443	108,395	29,260	1,003,098	19,235	7 10	19.2
Waterloo. ... "	4,208	1,483,933	325,701	45,685	1,855,319	39,520	9 39	21.3
Totals (1906	33,678	11,995,538	1,642,593	441,550	14,079,681	294,679	8 75	20.9
(1905	32,624	10,306,787	1,110,495	205,854	11,623,136	253,748	7 78	21.8
WELLAND:								
Bertie .....Tp.	2,826	1,685,850	19,900	5,225	1,710,975	20,856	7 38	12.2
Crowland..... "	1,040	541,194	2,025		543,219	5,467	5 26	10.1
Humberstone . "	2,582	941,045	23,850	7,350	972,245	10,569	4 09	10.9
Pelham. ..... "	2,479	1,131.665	14.400	5,118	1,151,183	13,365	5 39	11.6
Stamford ..... "	2,351	1,471,080	21,220		1,492,300	17,567	7 47	11.8
Thorold ..... "	1,772	653,223	5,615	950	659,788	8,419	4 75	12.8
Wainfleet .... "	2,627	1,104,936	7,810	100	1,112,846	14,730	5 61	13.2
Willoughby .. "	874	489,490	1,500		490,990	6,112	6 99	12.7
Totals (1906	16,551	8,018,483	96,320	18,743	8,133,546	97,085	5 87	11.9
(1905	16,205	8,020,972	77,695	17,538	8,116,205	89,917	5 55	11.1
Bridgeburg...Vill.	1,388	876,919	23,498	22,451	922,868	11,358	8 18	12.3
Chippewa .... "	641	137,710	9,600	653	147,963	2,332	3 64	15.8
Fort Erie..... "	956	338,984	12,435	4,517	355,936	7,277	7 61	20.4
Port Colborne. "	1,385	375,636	36,011	25,000	436,647	8,269	5 97	18.9
Thorold .....Tn.	2,092	569,703	126,502	21,040	717,245	19,199	9 18	26.8
Welland..... "	1,886	831,347	84,530	25,185	941,062	25,323	13 46	27.0
Totals (1906	8,348	3,130,299	292,576	98,846	3,521,721	73,828	8 84	21.0
(1905	8,396	3,020,681	165,428	71,614	3,257,723	71,269	8 49	21.9
Niagara F'ls (1906	7,954	3,730,257	209,334	51,500	3,991,091	93,520	11 76	23.4
City (1905	7,681	3,007,395	241,605		3,249,000	85,495	11 13	26.3
WELLINGTON:								
Arthur .....Tp.	2,703	2,503,816	5,150	200	2,509,166	17,868	6 61	7.1
Eramosa ..... "	2,411	2,035,175	30,515	8,885	2,074,575	16,568	6 87	8.0
Erin..... "	3,090	2,080,480	10.000		2,090,480	16,317	5 28	7.8
Garafraxa, W. "	1,996	1,708,050	4,200	3,607	1,715,857	17,056	8 55	9 9
Guelph. ..... "	2,196	1,888,725	40,650	20,100	1,949,475	13,981	6 37	7.2
Luther, W.... "	1,940	1,494,425	6,950		1,501,375	14,409	7 43	9.6

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.*	Mills on $
		$	$	$	$	$	$	
WELLINGTON—*Con.*								
Maryborough .Tp.	2,729	2,338,240	15,760	.....	2,354,000	20,203	7 40	8.6
Minto.. ..... "	2,752	2,413,425	9,300	.....	2,422,725	19,683	7 15	8.1
Nichol..... "	1,563	1,319,270	19,100	8,025	1,346,395	9,399	6 01	7.0
Peel .... "	3,371	2,849,900	12,695	3,523	2,866,118	23,704	7 03	8.3
Pilkington .... "	1,243	1,298,497	.....	1,850	1,300,347	9,441	7 60	7.3
Puslinch..... "	2,716	1,456,907	10,780	1,720	1,469,407	15,501	5 71	10.5
Totals {1906	28,710	23,386,910	165,100	47,910	23,599,920	194,139	6 76	8.2
Totals {1905	28,913	23,796,518	170,952	47,584	24,015,054	174,759	6 04	7.3
Arthur. ..... Vill.	1,266	322,850	37,700	12,750	373,300	7,646	6 04	20.5
Clifford..... "	580	146,795	14,982	6,420	168,197	2,577	4 44	15.3
Drayton ..... "	827	171,825	23,732	4,615	200,172	5,332	6 45	26.6
Elora ..... "	1,235	331,050	26,365	15,770	373,185	9,049	7 33	24.2
Erin..... "	505	116,425	13,838	.....	130,263	1,464	2 90	11.2
Fergus ..... "	1,511	431,095	39,368	13,521	483,984	11,802	7 81	21.4
Harriston. .... Tn.	1,644	467,680	59,206	2,950	529,836	16,064	9 77	30.3
Mount Forest.. "	2,306	656,410	72,270	20,930	749,610	18,989	8 23	25.3
Palmerston ... "	1,920	511,050	54,316	20,632	585,998	15,642	8 15	26.7
Totals {1906	11,794	3,155,180	341,777	97,588	3,594,545	88,565	7 51	24.6
Totals {1905	11,911	2,988,609	359,083	94,169	3,441,861	79,797	6 70	23.2
*Guelph, City {1906	13,100	4,410,420	590,450	62,332	5,063,202	105,223	8 03	20.8
*Guelph, City {1905	12,950	3,987,810	278,700	64,600	4,331,110	103,640	8 00	23.9
WENTWORTH :								
Ancaster.....Tp.	3,563	2,252,172	14,025	3,550	2,269,747	20,898	5 87	9.2
Barton. ..... "	4,341	1,344,907	21,122	22,975	1,389,004	15,511	3 57	11.2
Beverly ..... "	3,565	2,759,460	9,365	500	2,769,325	21,451	6 02	7.7
Binbrook..... "	1,212	1,001,775	4,219	.....	1,005,994	9,474	7 82	9.4
Flamboro, E.. "	2,316	1,652,105	8,225	.....	1,660,330	14,561	6 29	8.8
Flamboro, W. "	2,522	1,668,584	17,350	8,550	1,694,484	14,865	5 89	8.8
Glanford..... "	1,463	1,043,915	8,425	4,825	1,057,165	9,311	6 38	8.8
Saltfleet ..... "	3,160	2,215,110	24,955	6,110	2,246,175	23,317	7 38	10.4
Totals {1906	22,142	13,938,028	107,686	46,510	14,092,224	129,418	5 84	9.2
Totals {1905	22,029	14,200,947	122,443	47,104	14,370,494	119,961	5 45	8.3
Waterdown ..Vill.	685	156,965	9,820	1,010	167,795	2,607	3 81	15.5
Dundas.....Tn.	3,696	998,805	108,251	76,222	1,183,278	28,187	7 63	23.8
Totals {1906	4,381	1,155,770	118,071	77,232	1,351,073	30,794	7 03	22.8
Totals {1905	4,180	1,111,805	125,638	72,738	1,310,181	29,224	6 99	22.3
*Hamilton, City {1906	61,443	26,728,234	3,826,495	1,461,660	32,016,389	684,741	11 14	21.4
*Hamilton, City {1905	59,543	25,184,350	3,726,100	724,520	29,634,970	629,582	10 57	21.2

POPULATION, ASSESSMENT AND TAXATION.—*Continued.*

Municipalities.	Assessed population.	Assessed values.				Taxes imposed for all purposes, including schools.		
		Real property.	Business assessment	Income.	Total.	Total.	Per head.	Mills on $
		$	$	$	$	$	$	
YORK :								
Etobicoke ....Tp.	4,401	2,025,715	38,400	38,850	2,102,965	29,570	6 72	14.1
Georgina ... . "	1,573	889,920	9,450	1,000	900,370	7,053	4 48	7.8
Gwillimbury, E "	3,312	1,305,525	17,900	3,350	1,326,775	15,789	4 77	11.9
Gwillimbury, N "	1,493	938,620	11,390	.....	950,010	7,118	4 77	7.5
King. ..... "	4,649	2,868,621	14,000	.....	2,882,621	26,425	5 68	9.2
Markham .... "	4,985	3,199,905	23,600	900	3,224,405	27,038	5 42	8.4
Scarborough. . "	3,567	2,174,980	4,900	4,909	2,184,789	21,148	5 93	9.7
Vaughan. .... "	3,991	2,915,900	22,100	3,100	2,941,100	23,970	6 01	8.2
Whitchurch .. "	2,956	1,623,749	1,790	.....	1,625,539	15,270	5 17	9.4
York..... "	12,064	7,007,728	78,585	69,800	7,156,113	100,341	8 32	14.0
Totals { 1906	42,991	24,950,663	222,115	121,909	25,294,687	273,722	6 37	10.8
Totals { 1905	42,533	24,578,921	190,900	108,605	24,878,426	274,468	6 45	11.0
Holland L'd'g Vill.	390	67,750	6,000	930	74,680	1,030	2 64	13.8
Markham .... "	1,118	250,565	27,265	11,645	289,475	6,925	6 19	23.9
Richmond Hill "	647	156,330	14,355	4,629	175,314	3,260	5 04	18.6
Stouffville .... "	1,089	332,325	24,045	2,200	358,570	5,892	5 41	16.4
Sutton..... "	620	202,905	15,805	5,734	224,444	2 700	4 35	12.0
Weston ..... "	1,362	349,605	9,376	.....	358,981	9,542	7 01	26.6
Woodbridge .. "	572	158,523	14,758	.....	173,281	3,270	5 72	18.9
Aurora.....Tn.	1,672	448,950	47,515	4,350	500,815	12,248	7 33	24.5
East Toronto,. "	3,771	1,549,060	53,770	101,265	1,704,095	36,506	9 68	21.4
Newmarket... "	2,831	711,685	83,470	32,508	827,663	16,976	6 00	20.5
Totals { 1906	14,072	4,227,698	296,359	163,261	4,687,318	98,349	6 99	21.0
Totals { 1905	13,242	3,961,308	262,966	129,464	4,353,738	86,139	6 50	19.8
*North { 1906	2,578	1,132,153	10,594	24,600	1,167,347	27,766	10 77	23.8
Toronto. Tn. { 1905	2,293	1,028,244	12,450	21,385	1,062,079	21,909	9 55	20.6
*Toronto { 1906	10,151	3,886,430	328,055	176,680	4,391,165	99,359	9 79	22.6
Junct... Tn. { 1905	8,563	3,250,740	194,620	8,200	3,453,560	80,524	9 40	23.3
*Toronto, { 1906	253,720	140,999,965	18,807,812	8,099,015	167,906,792	3,686,478	14 53	22.0
City { 1905	238,642	131,945,028	12,434,676	4,949,763	149,329,467	3,382,981	14 18	22.7

Nineteenth Annual Reports

OF THE

Inspectors of Factories

FOR THE

Province of Ontario

1906

Published by the Ontario Department of Agriculture, Toronto

PRINTED BY ORDER OF
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1907

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TORONTO

la I.F

To the Honourable WILLIAM MORTIMER CLARK, K.C.,
Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour, the Reports of the Inspectors of Factories for 1906.

Respectfully submitted,
NELSON MONTEITH,
Minister of Agriculture.

TORONTO, 1907.

REPORTS

OF THE

INSPECTORS OF FACTORIES

FOR THE

PROVINCE OF ONTARIO

1906

REPORT OF INSPECTOR JAS. T. BURKE.

To the Honorable the Minister of Agriculture:

Sir,—I have the honour to submit the nineteenth annual report of the of the inspection of factories and workshops in the district assigned me for the year ending December 31st, 1906.

The noticeable feature of the year just closed has been the general prosperity diffused over the whole Province, and I do not think statistics are necessary to show the existence of industrial prosperity, which is in advance of previous years. There is practically no manufacturing establishment idle through the lack of demand for its products, and trade has been affected during the past few months by the inability of the mill and the factory owners to keep up with their orders, while in many lines this condition promises to continue well into the new year. A confirmation of the wonderful industrial progress can be obtained by visiting any of those centres, and the constantly increasing business of many manufacturers has resulted in an immense use of both steam and electrical power; therefore, all are interested in cheaper power, which is a question that must be forced sooner or later in order to profitably increase the size and number of our factories in this Province.

Overtime Permits.

Miscellaneous reasons were offered for requiring overtime permits, but each case was considered on its merits, and no permits issued that did not conform with the letter of the Act, which states that accidents to machinery, exigencies of certain trades, etc., will be accepted as logical reasons for granting permits. Again, the baking trade applied for permits, which were granted, particularly where a statutory holiday fell on a Tuesday, which requires journeymen bakers to start somewhat earlier on Sunday evening than that allowed by law.

Ventilation.

The great problem in ventilating a factory or store building is the supplying of air in sufficient qauntities without creating drafts, and removing the vitiated air under the varying conditions of changeable climates. It appears that nearly every work on this subject begins with a statement of

the chemical composition of the atmosphere. Moreover, we are told, to a small fraction, the percentages of oxygen, nitrogen, and carbonic acid in pure outside air, as well as the amount of watery vapor necessary, or supposed to be necessary, for the best conditions of health. "If the air contained more or less of any one of those gases, the mechanics of ventilation would be unchanged; but the amount of carbonic acid gas is of great importance, for the reason that as the air of a factory room grows foul from exhalations from the lungs and persons of its occupants, the amount of this gas increases in nearly exact proportion to that of certain other and more injurious impurities. Now, while these other impurities are very difficult to measure, the percentage of carbonic dioxide is easily determined. It is, therefore, with the physical properties of air rather than with its chemical composition that ventilating engineers have to deal. It is a property of air that it expands about one-five-hundredth part of its volume at thirty-two degrees for each degree of increase in temperature. This heated air being lighter than the surrounding air at thirty-two degrees tends to rise by the same level, and by the same law by which a cork rises from the bottom of a vessel of water. To this property of air we owe all ventilation, natural or artificial. The air at the surface of the earth, heated and expanded by the rays of the sun, rises to upper regions, and the cooler air comes in to fill the partially unoccupied space. In this way our whole atmosphere is kept in constant circulation and of an even degree of purity. It is upon the same principle that all our work in the ventilation of occupied apartments is accomplished. When the weather is warm enough for us to open our doors and windows, we may let nature do our ventilating, but when the weather is so frigid that we have to warm our apartments, we have the problem of artificial ventilation before us. Under such circumstances, we have a choice of two methods of keeping apartments comfortably warm. We can warm the air before we admit it to the room in any of the ways in which such work is done, or we can keep the room warm by means of stoves, steam, or hot water pipes within the room. The latter method is perhaps as cheap as others, but it furnishes no ventilation except what may be obtained by leakage or diffusion of air through the walls of the apartments. Buildings are not so constructed as to be impervious to air. There are small openings around the doors and windows and the walls are more or less porous. The air that is heated by stoves or steam pipes is constantly rising to the ceiling and passing out through every pore and crevice in the upper portion of the room and outside air is coming in by the openings below. It has been found that by diffusion through the walls of a room, the air within can be changed about once in every hour when the difference in temperature between the inner and outer air is 34 degrees Fahrenheit, but such diffusion is very uncertain, and should not be taken into account in providing means for ventilation, especially in our modern and better buildings; and we, therefore, believe that mechanical ventilation is the most reliable, as changes in the outside atmosphere do not materially effect the satisfactory working during the entire year. In the working of the pressure system fresh air is drawn from the outside and forced by fans into the rooms to be ventilated and escapes again through the agency of flues provided for that purpose. In the exhaust system ducts are provided for the inlet of the air, but the fans are connected to the outlet and circulation is maintained by drawing out the vitiated air and allowing fresh air to take its place. I may add in connection with this subject that many owners of factories and shops do not give the question of proper ventilation the required attention. In certain cases, the same can be said of the employees, who do not avail themselves of the appliances at hand to improve their surroundings.

Heating.

The Furnace.—Furnace air is not unwholesome, but it is the absence of ventilation which makes it so. If a furnace is of sufficient size to warm a building without opening every draft and heating the fire pot red hot, and if the fresh air supply is taken from a proper source and not from a damp area or unclean cellar, and, furthermore, if there are sufficient openings at the top of the house to allow the impure air which arises to that point to escape, and thus cause a constant circulation of sufficiently warmed, but not overheated air through the house, under these conditions, a furnace is not objectionable. Furnaces are often badly located. It is easier to force warm air through a furnace flue fifty feet away from the prevalent wind than ten feet in the opposite direction. The furnace should be placed nearest the northern side of the buildings, and if not convenient, two should be provided. Hot air flues should not be carried for any distance through cold cellars, halls or basements, as they will become chilled and will not draw without being cased with some non-conducting material as mineral wool. Again, do not set a furnace in a pit, especially in a wet soil where water will collect, but stand it on brick arches, so as to raise it above the ground and cement the pit. It is unfortunately very common to find such depressions filled with water. This causes rusting of the furnace itself and dampness in the cellar. Where fresh air inlets are carried from the factory drain to the front of a factory at the yard level, they should not be located near to the cold air supply, as there is a chance that during a heavy state of the atmosphere, a down draft may be created and the foul air sucked into the air box and thence upward into the factory. Registers should not be placed at the floor level, as they will collect dust, sweepings, etc., which are liable to take fire. Furnaces with heavy castings heat slowly and are less easily cracked or warped, and they cool more slowly, so that the heat evolved is more uniform. It is well to retain the fire close to the fire pot, and thus keep it longer in contact with the fire heating surface. Water pans are often badly arranged so that they admit dust, and as they are seldom cleaned, they may become offensive. Attempts have also been made to filter the air before entering the furnace, but they usually fail. A screen of galvanized iron wire of 1-16 mesh will exclude most floating material from the air. Hot water as a heating agent has a number of advantages, and is favored in moderate or mild climates, but in cold climates where winters are long and severe, hot water heating is not in general use on account of the following objections:—

Hot Water.—Hot water, as generally used, only gives off two-thirds the amount of heat per square foot of radiating surface which steam will give under similar circumstances. To get the same results as from steam, it requires about fifty per cent. more radiators and a corresponding increase of piping. Added to the expense of this extra material is that of labor, which increases in the same proportion, thus making the entire first cost of hot water about one-third higher than steam. As all the pipes are continually full of water, any leakage will rapidly flood a building, causing trouble and damage. With steam the flow pipes contain no water whatever, and the return drip pipes but very little, so that in the event of a leakage, the water would be discovered and stopped long before it could do any damage. Again, there appears no way in which a hot water radiator can be turned off and yet allow the water within it to flow back to the boiler, the construction of the radiator being such that all the water must circulate up and down between divisions connected alternately at the top and bottom. When the radiator is turned off, these divisions still remain full of water, which has no chance

to run off. It is, therefore, necessary to keep all the radiators in the house running all the time or else take the chances of their freezing and giving trouble if they are not shut off. It is also a curious fact that hot water will cool down and freeze much quicker than ordinary water under the same circumstances. The first effect in boiling water is to drive off all its air, hence becoming more solid and condensed, it is very susceptible to cold and will freeze very easily. If the fire in the boiler from any reason goes out, the water, of course, soon stops circulating, and in cold weather the pipes will rapidly freeze and burst.

Steam Heating.—A steam heating system having a pressure less than ten pounds by the guage is called a low-pressure system. If the steam is at a higher pressure, the system is called a high-pressure system when the water of condensation flows back to the boiler by gravity alone. The apparatus is known as a gravity circulating system. When the boiler is run at high and the heating system at a low pressure, the condensed steam must be returned to the boiler by a pump, steam return trap, or injector. The low pressure gravity circulating systems considered to be the best are: the two pipe system with wet returns, the two pipe system with dry returns, the one pipe system in which all mains, branches, and risers are relieved into a return main below the water line, and the one pipe circuit system, in which all pipes are run above the water line. The choice of any system will depend upon special conditions and requirements.

Exhaust Heating.—Exhaust steam from non-condensing engines usually contains from 20 to 25 per cent. of water and oil, the latter being employed to lubricate the engine cylinders. Before exhaust steam is allowed to enter a heating system, the water and oil should be separated. The effect of turning exhaust steam into a heating system is to form a back pressure on the engine, which should be avoided as far as possible by using large steam distributing pipes. A direct connection to the steam boilers through a pressure reducing valve should be employed to automatically furnish steam to the heating system when the exhaust fails. A relief valve should also be placed upon the system so that surplus exhaust steam may escape to the atmosphere. To proportion an exhaust heating system, it is necessary to know about how many square feet of radiating surface we should employ to properly condense the exhaust steam from the non-condensing engines. To do this we must first know the weight of steam that would be discharged from the engine, and afterwards deduct about ten per cent. for condensation in the cylinders, etc., in order to obtain the real available weight of steam for heating purposes. A reasonable average making allowances for exposure, etc., is that each square foot of direct radiating surface gives off to the air around it about one and one-half thermal units per hour per degree of difference between the temperature of the steam and that of the surrounding air. This is equivalent to about one-quarter pound of steam per hour, or, in other words, about four to four and one-quarter square feet of surface to each pound of steam to be condensed.

I may add that complaints are received about defective heating and ventilation, which is provided for by section 16 of the Ontario Factories Act, and in many cases we find that mechanical appliances have been provided but are working improperly; whereas by giving this matter a little attention and sometimes recommending inexpensive changes the difficulty has been overcome. The subject of heating is so closely allied with the question of proper ventilation, that the best authorities on both those great questions say it is impossible to properly heat a workshop or factory unless the ventilation is almost perfect.

PROSECUTIONS.

February 15th, 1906.

REX VS. FERGUSON.—Angus McCrimmon, Esq., Crown Attorney, for the Inspector of Factories, James T. Burke; J. B. Davidson, Esq., for the defendant.

The facts of this case are as follows:—

The defendant is the owner of the store on the north side of Talbot Street, in the City of St. Thomas, occupied by Messrs. Beal & Martin as his tenants. The lease under which they occupied the premises is in the statutory form, and contains no restrictions upon the tenants as to the kind of business to be carried on by them. They have occupied the premises since the 1st day of May, 1896, under the lease, and have, during that time, carried on the business of merchant tailors. The rear part of the building is used as a tailoring department and the front part as a sales department. They have been employing upon an average fourteen persons in the tailoring department,—six males and eight females. There is only one closet upon the premises, and that is in the basement of the store, and there is only one approach to it, and it is used in common by male and female. Section 15 (1) (*a*) of the Factories Act provides: "The owner of every factory shall provide a sufficient number and description of privies, earth or water-closets and urinals for the employees of such factory, including separate sets for the use of male and female employees, and shall have separate approaches to the same, the recognized standard being one closet for every twenty-five persons employed in the factory." The Inspector of Factories laid an information against the defendant for non-compliance with the foregoing section of the Factories Act. It was admitted on the hearing that the defendant had been notified in writing in regard to the complaint as required by the Act, and that he refused to do anything.

Section 2 of the Factories Act provides as follows:—

"(*a*) 'Factory' shall mean any building, workshop, structure or premises of the description mentioned in Schedule A to this Act, together with such other building, structure or premises as the Lieutenant-Governor may, from time to time, by proclamation published in the Ontario Gazette, add to or remove from the said Schedule such description or premises as he deems necessary or proper.'

"(*c*) Any premises, building, workshop, structure, room or place wherein the employer of the persons working there has the right of access and control, and in which, or within the precincts of which, any manual labor is exercised by way of trade or for purposes of gain in or incidental to the following purposes, or any of them, that is to say: the making of any article or part of any article, the altering, repairing, ornamenting or finishing of any article or the adapting for sale of any article.'

The Crown Attorney argued that the defendant came within one or the other of the above provisions and that he ought to be convicted. I shall, therefore, consider clause (*a*) first. This clause refers to Schedule "A" of the Act, and unless the business carried on by Beal & Martin can be said to be a clothing factory, the defendant cannot be convicted under the authority of that clause. The word "factory" means the same thing as the word "manufactory" and in my opinion a merchant tailor is not a manufacturer within the meaning of "The Ontario Factories Act." A merchant tailor may be a manufacturer in the narrow sense of the word, but I do not think that is the meaning which ought to be given to it in construing The Factories Act.

It should be construed in its popular sense and construing the Act in that way, a manufacturer is a person who produces goods from a raw state by manual skill and labor, and goods which are commonly turned out of factories, and in my judgment a merchant tailor cannot be regarded as a manufacturer. He merely cuts and fashions a suit of clothes as ordered by a customer from cloth purchased elsewhere and kept to be made up as suits are ordered. In speaking of a city as a manufacturing centre, or having factories within it, the ordinary understanding is that it has factories where articles of use are made in considerable quantities by the aid of many hands or of machinery and generally to be supplied to retail dealers. Viewing the Act in this light, I do not think that tailor shops or merchant tailors, not engaged in wholesale trade, can be included among the factories and the manufactures of a place. The Crown Attorney also contended that the word "owner" in section 15 meant the legal owner of the building, but I do not agree in that. "Factory" is defined to mean any building, workshop, structure or premises of the description mentioned in Schedule A. If the business carried on in this case can be said to be a clothing factory, the defendant is not the owner of the factor—Beal & Martin are the owners.

"I shall now consider clause (*c*). This clause may be sufficient to include a merchant tailor, but even so I do not think that it applies to the defendant by reason of the words contained in it, namely, the following words: "Wherein the employer of the persons working there has the right of access and control." The defendant is not the employer in this case. He has no right to go upon the premises except to view state of repair under the covenant in the lease giving him that right. If he were to go upon the premises except to view state of repair he would be a trespasser, and if the Factories Act imposes any duty upon him requiring him to make any alterations in or additions to the premises there is nothing in the Act exempting him from liability, and that being so, I do not think the Legislature intended to include the legal owner of the building, who has no interest whatever in the business carried on by others. I may also add that the Factories Act imposes substantial penalties for violations of its provisions, and it ought for that reason to be construed strictly in favor of the accused, and in any case where it is doubtful whether a particular provision applies to a person charged with a violation of such provision, the person charged ought to be given the benefit of the doubt. For these and the other reasons which I have given I think the defendant ought not to be convicted, and I, therefore, dismiss the charge.

(Signed) J. M. Glenn,
Police Magistrate in and for the City of St. Thomas.

In order to set aside some technical objections, this case came before Chancellor C. Boyd in Osgoode Hall, as follows:—

Rex *vs.* Ferguson. Judgment (E. B. B.)—On motion of the Attorney-General for Ontario for order directing the Police Magistrate of St. Thomas to state a case for the consideration of the High Court under section 900 of the Criminal Code, the defendant having been charged with a breach of duty under the Ontario Factories Act and discharged by the Magistrate on February 14th, 1906. On March 1st an application was made to the Magistrate on behalf of the Attorney-General to state a case. Section 900 of the Criminal Code has been made available for the review of all summary convictions under Ontario Law by virtue of the amendment of R.S.O. 1897, Chapter 90, by Edward VII., Chapter 13, Section 2, which was apparently intended to obviate the difficulty raised in Regina *vs.* Simpson 28, O.R. 531. The only objection now raised is that the application to state a case should have been

made within ten days after the dismissal as required by R.S.O. 1897, Chapter 90, Section 9. Held that the enactment does not apply to the method of appeal or review by way of case stated, but only to appeal to the General Sessions. The provision in the Criminal Code as to the case stated to the High Court has no such limitation of time, but provides that the application shall be made and the case stated within such time and in such manner as is directed by rules under section 533 of the Code. No such rules have been passed, and the result is that the matter should be presented in a reasonable time. Order made for statement of case forthwith. No costs. J. R. Cartwright, K.C., for the Attorney-General. J. A. Davidson (St. Thomas), for defendant.

An order was granted in connection with above by Chancellor Boyd directing that a stated case be prepared in connection with information laid by Factory Inspector Burke against F. H. Ferguson, of St. Thomas, whom the Inspector claimed has not provided adequate conveniences for the employees in the premises of Beal & Martin, the tenants of F. H. Ferguson.

Stated case as follows:—

In the High Court of Justice.

In the Matter of the King upon the Information of James T. Burke (Appellant), and Frank H. Ferguson (Respondent):

Case stated by James Morrison Glenn, Police Magistrate in and for the City of St. Thomas, in the County of Elgin, under the provisions of Section 900 of the Criminal Code of Canada.

1. On the 1st day of February, A.D. 1906, an information was laid, under oath, before me by the above named James T. Burke, for that the said Frank H. Ferguson, being the alleged owner of a factory, and known as No. 343 on the north side of Talbot Street in the City of St. Thomas, did not on the 31st day of January, A.D. 1906, and for six months previously, provide a sufficient number and description of privies, earth or water-closets and urinals for the employees of such factory, including separate sets for the use of male and female employees, and did not have separate approaches to the same as provided by the Ontario Factories Act, being Chapter 256 of the Revised Statutes of Ontario, 1897, and amendments thereto; and that the said Frank H. Ferguson for thirty days prior to the said 31st day of January, 1906, refused and neglected to comply with the above requirements after being notified in writing in regard to the same by the Factories' Inspector.

2. On the 2nd day of February, A.D. 1906, the said charge was duly heard before me in the presence of both parties, and after hearing the evidence adduced, I found that the said Frank H. Ferguson was not guilty of the said charge preferred against him, but at the request of the Crown Attorney in and for the said County of Elgin, representing the Attorney-General for the Province of Ontario, I state the following case for the opinion of this Honourable Court.

The facts of the case and the reasons for the conclusion of law arrived at by me appear in the writing hereto annexed. The said Crown Attorney, representing the Attorney-General for the Province of Ontario, desires to question my decision on the ground that it is erroneous in point of law, the question submitted for the judgment of the Court being,—

1. Whether the said Frank H. Ferguson is the owner of a factory upon the facts found by me within the meaning of The Ontario Factories Act and

amendments thereto, and whether he ought to be convicted upon these facts or not.

JAMES MORRISON GLENN,
Police Magistrate in and for the City of St. Thomas.

Dated at the City of St. Thomas this 9th day of March, A.D. 1906.

After some delay this case for appeal came before Chief Justice C. J. Falconbridge at Osgoode Hall, as follows:—

REX *vs.* FERGUSON. Judgment (L.).—On case stated by the Police Magistrate for the City of St. Thomas under Section 900 of the Criminal Code. An information was laid against Frank H. Ferguson, the defendant, by James T. Burke, for that the defendant being the owner of a factory in St. Thomas did not on January 31st, 1906, and for six months previously provide a sufficient number and description of privies, earth or water-closets and urinals for the employees of the factory as required by The Ontario Factories Act, R.S.O. 1897, Chapter 256, and amendments, etc. The Magistrate found defendants not guilty, and the question stated was whether or not upon the facts the defendant should or should not have been convicted of the offence charged. Held, that the premises of defendant is a "factory" within the meaning of the Statute, and it is *nihil ad rem* that the employer is not the person charged, and it is the duty of the owner under the Act to provide closets. The defendant should have been convicted of the offence charged, and the case is remitted to the Magistrate to deal with.

J. R. Cartwright, K.C., and A. McClimmon (St. Thomas), for the Attorney-General and the Factory Inspector; J. B. Davidson (St. Thomas), for the defendant.

DEFECTIVE MACHINERY.

In using the term defective machinery, the intention is to have it apply to all parts of machinery so constructed and exposed as to be likely to cause an accident. The usual custom is that when an industrial plant is to be established the cost of its construction and equipment is the first consideration, and generally, from a standpoint of economy and competition. Machinery after being in operation breaks down under most peculiar circumstances. Then the discovery is made that what was an apparent saving in the first cost must necessarily be expended in making repairs; while possibly the danger to both life and limb which is caused by endeavoring to operate an unguarded or faulty constructed piece of machinery, has been overlooked. Many valuable devices have been invented to prevent accidents, including various kinds of woodworking machinery, with a slight additional cost. This class of machinery could very well be guarded when under construction, but we find those machines sold day after day and placed in operation without any life or limb saving appliances being attached. Again, we find gear wheels exposed, while there is some improvement, yet we frequently find new and second hand machinery set up for operation with exposed gear wheels so operating that those who are compelled to be at or near them are liable to be caught and seriously injured. Again, we find machinery of all kinds, no matter for what purpose intended, from the crude to the finest and most complicated, turned out without proper guards, etc. Frequently we find a beautiful and costly engine highly finished with exposed gear wheels and projecting set screws, rendering it very dangerous for the engineer and somewhat difficult to remedy. If the proper attention had been given these details when the machinery was under construction, they could easily have been safeguarded. Occasionally we read of damage suits being filed against some manufacturer

by one of his employees who has been injured by a defective or unguarded machine. In all probability the machine which caused the accident was exactly in the same condition, except for wear and tear, as when turned out of the maker's factory, yet the person who purchased it became personally liable for damages. It seems to me that it would be more along the lines of justice if the manufacturers of the machine should be called upon to assume at least part of the responsibility for the damage caused by their indifference to safeguard any defects in the machine before selling it to the manufacturer. I have reason to believe that causes of accidents which now happen in our manufacturing industries would be reduced very quickly if the makers of machines were held at least equally responsible with the manufacturer. Experience has well and often taught that a prevention is far more valuable than a cure for an evil, and I can see no reason why the same rule will not apply in preventing accidents. Moreover, in the construction of machinery, we should look for two results and two only—durability and perfection both in production and construction. If this rule were followed, I dare say many reasons for accidents would be eliminated.

Accidents and How to Prevent them where Machinery is in Use.

The information we derive from employers' reports of accidents serve to very good advantage. They show at least that accidents in factories and workshops inflict on employers serious bodily injury. Pursuing this course with accidents in general, it becomes possible to some extent to classify causes and to almost determine the specific means by which many of those accidents can be averted. Most accidents have what we may term a primary and a secondary or immediate cause. The primary cause is that which preceded for some time the actual mishap, and the condition which invites accidents is generally discovered to be a case of neglect on the part of some one. Proper attention given to the primary causes would avert many disastrous accidents. Ignorance of impending danger is sometimes excusable. To know how to remedy a defect, the defect must be apparent and recognizable. There are too many employers who are totally uninformed as to the inside arrangements or surroundings of their factories, but such want of knowledge does not relieve them of responsibility unless those in charge as their agents have full authority to remedy defects and to incur costs in providing all necessary means for safety where guards and appliances might be used to great advantage. Employees are often permitted to depend solely upon their dexterity of hand and their continued vigilance to avoid personal injury. Danger in many forms is allowed to exist because of the expense it would involve to make the required change. Posted notices can be observed warning of some recognized danger when for the cost of a few dollars all risk from such a source could be removed. It would appear that more accidents result from the one cause, namely, the cost to be incurred by improvement, than from all others combined. Again, the Inspector meets with all kinds of argument in opposition to guarding various machinery, the most common being that guards are unnecessary or impracticable, or that such a guard would interfere with the productive capacity of the machine, or that the employee will not use them. The latter excuse, I must confess, is somewhat true amongst happily a minority of factory employees; but such men are a source of danger everywhere and should be compelled by law to cultivate more careful ways. Again, we find that guards and protections of all kinds are removed for temporary convenience by some employee, and the guards, etc., are left for others to replace or assume risk of accidents. From what is known we may

logically infer that as employees become better informed and more inclined to give attention to the possibility of an accident, such will become less frequent, and it will be admitted in most instances that guards placed upon machinery serve to protect it from wear and breakage and thus add to its durability and productiveness as well as safeguarding life and limb. I may claim that dangerous machinery should be guarded, and the Factory Inspection Departments in England, Germany, and other countries, including our own Province, have demonstrated that such can be done.

Steam Boilers and Explosions.

There is no piece of machinery or attachment to machinery known that occupies so important a position in our industrial establishments as the steam boiler. It is found in every establishment where steam is used for heating and supplying power. So common is it that we seem to forget its importance, and the consideration it so justly merits is many times neglected. A steam boiler, while in perfect repair and under the care of a skilled engineer, is practically speaking, harmless, but when it becomes deranged in any particular, or is subjected to unskilled usage, it becomes uncertain, and is therefore liable to cause damage and possible loss of life. I have referred to the matter in previous reports, and recognize that in passing Bill No. 102, which is an Act to amend the Act respecting Stationary Engineers, it is a step in the right direction, and will eventually supply a first-class staff of stationary engineers. To insure comparative safety in the use of steam boilers, it is not only necessary to employ fully competent engineers, but there should be coupled with it a thorough system of boiler inspection, and I desire to say that the law relating to boiler inspection should be so changed that the present boiler inspection companies authorized in this Province should be required to furnish us with an annual list of boilers insured, and also cancellations or new business. Coupled with this I would recommend that the present paragraph of the law relating to uninsured boilers should be changed so that instead of owners being required to make an annual inspection only, this department might insist on having an inspection made when we have cause for alarm or receive complaints, as we frequently do, that steam boilers are unsafe.

In May of last year a boiler in the Neibergall Stave and Lumber Company's plant at Staples exploded, killing one man and injuring several others. From what can be gathered, it appears the engineer closed down the engine to permit of some repairs being made. It is said that the boiler was under heavy steam pressure and that the safety valve was working, and in order to reduce the pressure a portion of the hot water was blown out and was being re-filled when the explosion took place. In the mill were two other boilers, one of them not in use, but filled with water ready to use. The force of the explosion was so great that several windows were broken. The disabled boiler had been overhauled a short time before and pronounced in good order, after being tested. A similar accident occurred in Staples about 13 years ago with more fatal results. At that time, it is reported that seven men were killed and as many more injured.

Bake Shops.

The provisions of the law relating to bake shops have been kept well in view, and many orders have been issued requiring cleaning, whitewashing, repairing floors, putting in drainage pipes, repairing water-closets, sinks, etc., also a supply of clean towels. A new evil has crept in, and that is the

arrival of Europeans, who have taken up the baking trade, and from our experience it would appear that they desire to continue the dirty shop which we are determined shall not exist. Health, economy, and business interests demand the clean bake shop. I believe that it will be in the best interest of this Province to abolish, as soon as possible, the underground bake shops and storage rooms for food products in the raw or manufactured state, as they cannot with the greatest care be kept in such a condition as would warrant the manufactured or raw article from becoming tainted with impurities from the underground surroundings. I believe that the Inspectors should be empowered to close filthy bake shops until the necessary alterations have been made. Again, on account of the willingness of many owners of bake shops to make the necessary changes, we have deferred making reports of their conditions public, as it might produce a prejudice against their products.

Accidents.

In another portion of this report will be found tabulated statements of accidents that have been reported to this department during the past year. The law is very clear, and requires that owners and others in charge of factories shall report accidents to this department, but there appears to be a certain amount of neglect on the part of some manufacturers to make such reports. This should not be, as the reporting of accidents has a much higher and more important purpose than to show a record of fatality and casualty. While it may appear as making up the darkest and most distressing pages of our industrial history, yet it serves as a guide to the inspector to investigate the cause of the accident, and enables him to exercise some mechanical ingenuity to prevent a repetition of a specific accident in the same establishment, and also to prevent accidents of a like character in other establishments. From this standpoint, it will be readily seen how very important it is that Inspectors should be in possession of accurate record of accidents which occur in this Province coming within the provisions of the law. The number of accidents in my district as reported during the year total 132, of which 7 proved fatal, and are as follows:

Moses Ballantine, employed in the factory of the Globe Casket Company, London, was fatally injured on March 10th by a piece of wood flying from a circular saw and striking him on the body, from which he died.

Mrs. Charles Thornthwaite, wife of the owner of a grist mill in Vienna, was instantly killed on March 16th by her skirts becoming entangled in a revolving shaft.

Charles Forton, employed by the Hiram Walker & Sons, Walkerville, was found dead in a partially emptied grain bin on May 10th. It was supposed that he fell from a ladder, caused by dizziness.

Abraham Stauffer, employed by the Acton Tanning Company, Acton, on June 2nd, while engaged in removing leather from a drum, another employer is supposed to have shifted the mechanism, which placed the drum again in operation, causing the deceased to be crushed between drum opening and beam, from which he died in about thirty minutes.

Jacob Klahs, employed in the L. Kuntz brewery, Waterloo, was scalded to death on August 3rd, by escaping steam, which the deceased apparently neglected turning off.

Jacob Ullman, Ridgetown, was killed on September 20th. It appears he came to talk with his father, who was employed by the Howard Cooperage and Lumber Company, loading logs on a car. The stakes on car gave way and three logs rolled off the car, striking deceased and killing him instantly.

Allen Murray, employed by the Wortman & Ward Company, London, was killed by an emery wheel bursting on December 11th.

Convention.

The twentieth annual Convention of the International Association of Factory Inspectors of North America was held in Columbus, Ohio, on June 19th-21st, 1906, at which Mr. Keilty and myself were present. Mr. Keilty read an excellent paper entitled "The Progress of Factory Legislation in the Nineteenth Century," which was one of the best papers presented at any of those Conventions. I may also add that these Conventions are a school for the exposition of methods and the diffusion of knowledge, as there are always found in a body of persons whose duties are multifarious some who have the talent and the disposition to make at least one of their duties a specialty, and whose thoughts and experience on such a subject placed on paper and discussed by the Convention generally imparts a knowledge of the questions under consideration to each one interested which would be difficult to obtain otherwise. I am, therefore, pleased and grateful that you made arrangements for us to attend this Convention.

I have the honor to be, sir,

Yours respectfully,

James T. Burke,
Inspector of Factories.

REPORT OF INSPECTOR THOMAS KEILTY.

To the Honorable the Minister of Agriculture.

SIR,—I have the honor to submit a report of the inspection of factories and shops in the district assigned to me during the year ending December 31st, 1906.

It is not possible to enumerate in detail in a report such as this the many experiences and labors that come to the lot of an Inspector. It is also apparent that each year's report contains much of a general nature that may not be interesting to many who receive the Inspectors' annual reports. It must be remembered, however, that the Inspectors' reports are not ready made, nor are they intended, to tickle the fancy of persons who may be looking for romance or adventure, but to place before you and your Government, as exactly as possible, the conditions and experiences (with possible suggestions) as they are met with in the department of Factory Inspection during the year.

THE CANNING INDUSTRY.

It is quite within the province of an Inspector to note the very rapid development of the canning industry in this Province. It is not presuming too much to say that a very small percentage of our population realize the extent of this industry. The canning of fruits and vegetables is to what I more especially wish to refer. In fact, I think I can safely say that even those who are engaged in the canning of fruits and vegetables, have themselves been surprised at the success that has attended their efforts. Where development is so rapid, it is sure to be attended with experiences that arise through practical application of science or process. It is evident to the casual observer that from this and other sources much has been learned. It is also evident that there is yet much to learn before this industry can be classed among those that have arrived at a state of perfection. There is one feature that stands out prominently as a requisite of absolute necessity, namely, an abundant supply of pure water.

Next and equally important is good drainage. Where this cannot be obtained by natural conditions, such artificial means should be provided as will meet this requirement in a most effective manner. Strange to say, notwithstanding the commercial advantage of these canning factories to some communities, we find people whose sole purpose seems to be one of obstruction. They glory in the fact that they own some piece of ground or control some creek or place, that might be of possible advantage as an outlet for sewage disposal. This point is worthy of mention, because in the district assigned to me, I find that in many cases the disposal of sewage and refuse is one of the most difficult problems that confront the canners.

It would not be just for me to outline a detailed policy that might be generally adopted in the process of canning fruits and vegetables. In fact, it would be presumption on my part to do so. But I do believe that it is time a definite policy was formulated. In doing this it would be necessary to investigate thoroughly all conditions that surround the preparation of canned foods more thoroughly than is within the province of a Factory Inspector.

I am of the opinion that the industry of canning fruits and vegetables has reached a state of importance, but not a state of perfection. By this latter I do not mean that the goods presented for consumption are not of a standard quality. On the contrary, I do not hesitate to say that each place

visited by me had the one watchword: "Put nothing in the packages that is not perfect." I believe that when perfection will have been realized much of the refuse that is now a source of trouble and expense in its removal will be utilized as a by-product of considerable commercial value.

There is another problem that confronts the canners, and one that will be difficult to entirely remove. I refer to the question of help. In this respect the trouble arises in different forms, and is controlled largely by weather influences. For instance, if the weather is dry, warm and sunny the maturity of the crop is so hastened, that canners are at their wits' end to handle the crop in a perfect state, and without loss to the producer as well as the manufacturer. Thus it will be seen that until machinery is made to do much of the work that is now done by hand, the problem of providing a staff to meet such emergencies will still remain difficult.

In this respect, so far, I am pleased to say that the canners have in my district met this problem without the aid of imported labor. Notwithstanding this, the seriousness of the question is presented in the fact that many of those persons so engaged found it necessary to work until their physical endurance was completely exhausted. The danger from this lies not only from a physical point of view, but in the danger of persons operating machines under a physical strain as well as that of engineers having charge of boilers when they were unfit (because of their wearied condition) to undertake the duties of so responsible a position.

The responsibility for this, so far as I could learn, may be equally divided between the employer and the employee. The former, because he cannot find suitable men willing to undertake the work of relieving his engineer for so short and uncertain a period; the latter, in his effort to concede to the wish of his employer, and his natural desire to make hay while the sun shines. In neither case would I like to charge a wilful violation of the laws of nature, but rather think that both are doing the best they can with the means available.

I have suggested under present conditions, that in so far as relate to the safeguarding of machinery, and the sanitary conditions, this work should be taken up during the season when fruit or vegetables are not being canned. This course is based on the ground, that during the canning season, there is very little opportunity to undertake even slight repairs. But, as before indicated, I am of the opinion that good results would follow a thorough investigation into all the conditions that surround the canning industry, not only with the object of protecting the public but also with that of assisting those who are engaged in this important industry.

As to the canning of meats, there are in my district some very important packing houses. These places are most inviting, and to any person who may have skeptical ideas regarding the packing houses that I have inspected, I would suggest a personal visit, which I believe would remove any doubts as to the class and condition of food that is prepared and put up in these places. Were I to offer any suggestions regarding these places, it would be that all goods put up be labelled with the name of the person or firm who puts them up. Benefits from this suggestion would be gained both by the public and the manufacturer. By the public, in knowing that the goods were put up under wholesome conditions, and to the manufacturer in having his goods placed in a true light before the public. In proof of this, I venture to say that more than seven-eighths of the people of this Province are under the impression that all the Bologna sausages presented for sale on our markets are imported from some foreign market, where they are put up under

such sanitary conditions as may exist there, and composed of such scrap as would be unfit for any other purpose. Such, however, is not the case, nearly all the product being of local manufacture. My reason for dealing with this subject at some length is because there is no form of industry so vital to the general public as the preparation of food products. And from the manufacturer's standpoint, there is nothing so perceptive to the influence of public sentiment as the conditions under which food is prepared. Thus the conditions of such industries require most careful consideration.

Industrial Development.

It is needless for me to say that our industries have very materially increased throughout my district during the past year, and I believe this condition to be general throughout the Province. This applies in a special manner to the iron trade, and as iron is the king industry, it follows that all other industries have continued active. It is known to the Inspector that some very large factories are operating in this Province that are scarcely known in Ontario outside of their immediate vicinity, as the bulk of their product goes out of the Province. Another reason perhaps for their obscurity is that in many cases goods are made at the order of a wholesale house, and bear its label, and it is therefore not surprising to meet jobbers handling a stock of goods who do not know where they are made.

This increase in the demand for production has often taxed the manufacturer to find help of a suitable kind to carry on his works as extensively as he would like. This condition is frequently presented as a reason for placing persons at dangerous work with which they are not familiar. I have in all cases advised against this, believing that in most cases it is done without fully weighing the results and responsibilities that rest with those who disregard the dangers concealed in such a course. It is all right so long as nothing happens; but if something should happen, then comes the time for regret, and then it is too late for the person who is maimed for life, if not killed outright. When it is considered the great army of industrial victims that are annually reported as injured—some partially incapacitated, others killed outright. When we consider the great army of industrial victims method of prevention that is offered, in order, if possible, to lessen this great calamity. I feel justified in using the term calamity, for if in the Province of Ontario we were to experience a battle or conflict of some kind that would cripple five or six hundred of our citizens—many so serious as to become a public charge, if not on the Province on their friends—and had added to this forty or fifty killed outright, then would the public awaken to a sense of duty, and justly term it a great calamity. Of this class it can be justly said they are the bone and sinew of our Province, and yet this is the loss we experience every year. Is it to be wondered at, then, that the Inspector spares no effort in trying to remove as far as possible the danger that is ever in evidence where machinery is operated by power? Perhaps these dangers are more vividly impressed on the Inspector than the general public, owing to the former's intimate knowledge of these accidents. But that does not remove the responsibility of the manufacturer or the workman in co-operating with the Inspector in removing as far as possible the causes that contribute to such accidents.

It has been said that the blindest men are the ones who do not want to see. Each year the Inspectors have placed before the manufacturers the list of the various accidents that have been reported throughout the year, giving the cause, nature, and extent of injury as briefly as possible. Not-

withstanding this I have approached men with a view to having certain machines guarded, who would say offhand: "Why, there is no need for that. An accident could not happen on that machine in a hundred years." To which I would reply: "Did you read the Inspectors' report of last year, containing several accidents that happened in the very way that I suggest?" The answer is invariably "No. I got some pamphlet from your office, but I did not have time to look into it." Then we look at the report together, and find several accidents from this particular cause. The man is convinced that the machine requires protection. If the manufacturer and the workman are interested in the work of factory inspection, only in so far as the periodical visits of the Inspector are concerned, the best results cannot be even hoped for. It requires an earnest and lively interest on the part of every person concerned to obtain good results.

Boiler Inspection.

Defective boilers have added to the list of casualties, and the records show each year the greater need for effective and uniform legislation to protect innocent victims against what might be termed the indifference of some manufacturers and workmen. I am pleased to say that the great majority of our manufacturers coming within the meaning of the factory laws are most desirous not only that their boilers should be inspected in conformity with the law, but that they shall be perfectly safe. There are still others whose only purpose is to barely comply with the letter of the law, and this sometimes after several visits of the Inspector, or when he has already written several letters on the subject. I have received several forms of certificate during the past year that would scarcely be considered worth the paper they were written on to the manufacturer in the event of an accident. In all such cases I have persisted that the certificate must contain some definite information regarding the nature of the inspection. The result of inspection in my district during the past year resulted in one boiler being condemned outright, another gave away while being tested, and another that had been tested blew up injuring two men (one so badly that he died). This latter accident was said to be due to a careless and incompetent engineer. I feel confident in assuming that the other Inspectors have had many such experiences as I have just related.

It has been pointed out with some force of argument that there are many boilers that do not come within the scope of Factory legislation which are in a worse condition than those for which the Inspector demands a certificate. This can truthfully be said of many boilers used in cheese factories, and portable boilers used for threshing, sawing wood, hoisting coal, small chopping mills, small portable saw-mills, and last, but not least, many boilers used for heating purposes. These conditions have been placed frequently before the public by the Inspectors, with the hope that ultimately legislation of a uniform and practical nature will be framed that will place all boilers under the bann of uniform and practical inspection. It has also been shown that a certificate of the inspection of all boilers should be returnable to the Factory Inspectors each year, whether the boilers are insured or not. The cause for this has been frequently explained, and each year but adds further proof for its necessity. In fact, I do not know that there has been any objection to this demand. However, the inspectors have to not only visit, but write several letters to ascertain if the law has been complied with or not, after which the same routine has to be gone over the next year; whereas if the law required that the owner of every boiler was required to

supply the Factory Inspector with a copy of certificate of the inspection of his boiler, whether such boiler was insured or not, such copy to be returnable not later than a certain date, then not only would labor be saved, but a more perfect, satisfactory, just, and uniform standard be maintained. This method could not be considered a hardship to the manufacturer or an injustice to the Insurance Companies. These conditions have all been referred to in former reports of the Inspectors, but as each year reveals the want of more uniform and systematic legislation in every department, I feel justified in keeping this important subject well in view. I am pleased to state, however, that by the persistent efforts of the Inspectors, and from the fact that the districts having been reduced in area by the addition of more Inspectors, within the past few years the work of boiler inspection, in common with the other duties of the Inspector, have been enabled to receive more careful attention.

The Factory Inspectors' Convention.

I had the privilege of attending the Convention of the International Association of Factory Inspectors held at Columbus, Ohio, in June of this year. It is a privilege indeed to the Inspectors to attend these Conventions. The practical views and experiences of the Inspectors throughout the United States and Canada are concentrated at these meetings in such a concise manner as to give each Inspector in attendance the benefit of very useful information.

The International Association of Factory Inspectors is not a new institution, having been in existence for upwards of twenty years. It was founded twenty years ago at Philadelphia, Pa., by the Hon. Henry Dorn, who still retains active membership in the Association. It is pleasing to note that the Department of Factory Inspection of Ontario has since its inception retained membership in this Association. The papers read and discussed at this last convention were as follows. 1st, Address by Hon. Henry Dorn, (who is justly called the Father of the Association), dealing with the growth and progress of the Association, and pointing out in definite terms that the Association was neither a debating club nor a mutual admiration society, but rather an occasion for the grasping the full purport of the questions which come to us, and settling them in a manner that would do the greatest good to the greatest number. This was followed by the President's address. This always contains a synopsis of the important questions that are to come before the convention. Next on the list was the report of each State regarding conditions and any new legislation, and legislation pending or being repealed. A paper was read by Thomas Keilty, Ontario, Canada, on "The Progress of Factory Legislation in the Nineteenth Century." Other addresses were: An address on "The Mechanical Construction and Working of Elevators," by Mr. O. F. Shepard, a practical Engineer of Ohio; a paper entitled "Diplomacy *versus* Force," by Alfred Shephard of Iowa; an address by Mrs. F. C. Howe (wife of Senator Howe of Ohio), on "Child and Female Labor;" a paper entitled "Status of Child Labor," by Mr. Baker, Ohio; a paper by Mr. Morgan, Ohio, on "The Conditions and Experiences found in the Factories and Workshops of Ohio." The papers read were discussed from all points of interest, and there were also general discussions on all phases of Factory life and laws. To form an adequate idea of the usefulness of this Association, one would require to read a report of the full proceedings of the convention.

The question of female and child labor received perhaps more attention at the Detroit Convention than at any other time in the history of the Association. This subject is becoming a very live question in the United States. Not only have the moral and physical effects become apparent, but the competitive features are considered alarming. A paper read at the Detroit Convention by Mr. Bodwine, of Chicago, entitled, "The Competitive Life," presents a word of warning regarding the future and even the present evils arising from this source. His paper contains some remarkable statistics on this subject, and proves conclusively that his remarks were carefully prepared. It might be added that he is not a member of a Factory Inspection Department, but a member of the National Child Labor Committee, authorised by the United States Government, to gather such statistical information as would be reliable to formulate laws, and provide such legislation as may be found necessary in that respect. This committee is composed of men of leisure, experience, and means, and every opportunity is afforded them in order that their information may be most reliable.

Bake Shops and Overtime Permits.

These two subjects are somewhat allied in the important industry of baking bread, and like the canning industry is so little affected by legislation as to be almost free from the requirements of the Factories Act. In fact, the Legislative enactments governing bake shops, are entirely confined to the Shops Act. I do not know that they in any way suffer by this, or that the Shops Act and the Factories Act in any way conflict in this respect; but for all purposes and intents, it would seem both practical and just that all the requirements of the Shops Act be embodied in the Factories Act. Experience has proved that in all cases wherever practical, the more general the legislation, the more easily it is applied, and the application is invariably followed with better satisfaction and results. The Inspectors are authorized to grant a permit to work overtime under certain conditions by the provisions of the Shops Act. If this be justified, why not make it a statutory enactment, that under certain conditions it is lawful to work overtime? I do not think it is presuming too much to say, that in other respects the law in its present form cannot be considered entirely satisfactory. For instance: When the Inspector has granted a permit to commence work in a bake shop on Sunday before the time stipulated in the Act, it only protects such baker from prosecution by the Factory Inspector, and he is still subject to prosecution under the Lord's Day Act. Of course this latter is subject to the order of the Attorney General. As before indicated, it would seem that a revision of this Statute would be a step in the right direction.

I am pleased that this industry, in common with all others, is growing more perfect each year. The large bake shops (or rather confectionery shops) do not require permits in the sense referred to above, but rather in the meaning of the Factories Act. At certain seasons—principally in the holiday season—a permit is asked to get out a rush of goods that may be required on short notice. These permits are usually of the kind permitting young girls and women to work longer hours than is ordinarily permitted by the Factories Act. But in the general bake shop where bread is the principal production, the demand for a permit is frequently applied for especially by those who desire to live within the pale of the law. During the latter part of this year the attention of the Inspectors was directed to a class of shops that did not seem to regard the Bake Shops Act in any particular. I refer to the Jewish bakers. Not only were they indifferent as to the requirements

of the law, but they persisted in their peculiar way to remain under their present conditions and methods unmolested. As to what was done under the circumstances, I will leave it to some of the other Inspectors who had the case in hand to explain.

Overtime permits under the Factories Act maintained about an even standard this year. It is only in cases of emergency as provided by law that permits are asked for. Manufacturers have generally observed that it is not profitable to work long hours. It might be reasonably expected that with the sudden demand for production, the necessity to work overtime would follow. This, however, is not the case to the extent that might be imagined. All other conditions relating to bakeshops may be considered fairly within the meaning of the Act.

Laundries.

Laundries may be considered to be about in the same condition as that of last year, except that where new laundries are built the most advanced methods and machinery are installed. It might be added that in so far as laundry machinery is concerned, it is usually guarded by the makers, and with a little care in setting it up, there should not be much trouble from this source. The inspection of boilers is, therefore, the most important feature that requires attention in this industry.

Foundries and Machine Shops.

As referred to in former reports, I would again advise the necessity of providing warm and suitable lavatories and dressing rooms in foundries. Each year proves more conclusively the need of this. There is no class of work more laborious and subject to such extreme temperatures as that of the moulder. And it is not surprising that each year this class of labor is becoming more scarce. The young men of to-day prefer to select an occupation that is easier, and this is but natural. Most other trades have all that might be considered hard or laborious removed by process of machinery, whereas the moulder has not been relieved to the same extent in this way. It is important that this trade receive the fullest consideration in this and every other respect, in order to remove as far as practicable, all the harshness that attend it. The necessity is apparent when the importance of a moulder is considered in the iron trade. This question is receiving the earnest attention of the United States Governments. Some States having already provided legislation governing this feature, and some enterprising manufacturers have provided this necessity in advance of legislation. This same requirement is necessary in every factory where workmen are exposed to high temperatures.

Sawmills.

One of the violations evident in many sawmills is the employment of persons who are not of the required age. There does not seem to be much excuse for this in my district, as the opportunity to attend school is everywhere in evidence. Notwithstanding this, I have found several young boys engaged in these places during the year. Some were engaged on the double-shift, working all night. Inhuman parents who would permit their offspring of tender years to work all night certainly requires attention. While there is always the dangers that attend this industry before us, that of child labor, boiler inspection, and the guarding of dangerous parts stand out most prominently, all of which have received my earnest attention.

Other Industries.

All other industries coming within the meaning of the Factories and Shops Acts have received my careful attention throughout the year, and I am pleased to report a steady and marked improvement in general efficiency.

Accidents.

The reports of accidents would indicate that there was still much room for improvement. While this is true, the Inspectors have evidence that the number of accidents reported is due in a large measure to the more faithful observance of the law in this respect. The value of this enactment is hardly realized in its fullest sense. As before indicated, the educational features derived by the reporting of accidents is proved by their effect on persons who believe a certain machine or place to be immune from accident, because it has been in existence for a long time, and that such condition has proved its safety. These convictions, honest as they are, have been removed by the proof that accidents have happened in this way at some other place. Hence the benefits of this legislative enactment is at once apparent.

Legal Decisions Affecting Labor.

The following legal decisions affecting industry have been gathered from different sources throughout the year, "principally" from reports contained in the *Labor Gazette*:

Connell vs. Ontario Lantern & Lamp Co. (Divisional Court, Ontario). Jan., 1906. Plaintiff appealed to have verdict set aside and granted a new trial. Appeal dismissed, allowing judgment to stand, awarding $1,000 damages. This was a case where a workman lost three fingers by being taken off in a punch-press.

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Charles Brazier vs. The Canada Brass Company. (Assize Court.) Middlesex, Jan., 1906. Judgment awarded plaintiff for $1,500 for loss of an eye. While using a saw without a proper guard, a knot came back, striking the operator, causing the loss of one eye, and injuring the sight of the other.

International Harvester Company vs. Graham. (Supreme Court.) April, 1906. It is alleged in this case that the defendant's method of performing the work that caused this accident was defective. While performing a certain operation on a hot bar of iron by which a piece of cold iron was driven into it, the cold iron was caused to fly up, striking the operator in the abdomen, from the effects of which he died.

Allan vs. Sawyer Massey Co. (Divisional Court.) July, 1906. Plaintiff recovered damages of $2,000 for loss of an eye, caused by defendants not providing a suitable guard to protect persons in the vicinity where castings were being chipped. The evidence established that the employment was dangerous, and that it was the duty of defendants to provide a suitable screen or such other means as is available to protect their workmen from flying chips.

McBain vs. Waterloo Manufacturing Co. (The Court of Appeal for Ontario.) October, 1906. Judgment was given plaintiff for $1,200 for alleged defect in the protection of machinery, pursuant to the requirements of the Ontario Factories' Act. The plaintiff was working at boiler plates, and was thrown against a machine that was not properly guarded and was seriously injured.

Steinburg vs. McLary Manufacturing Co. (Middlesex Assizes.) September, 1906. The sum of $500 was awarded the plaintiff for the loss of several fingers cut off with a press that was claimed to be out of repair.

Jewitt vs. Canadian Cordage Co. (Justice Maybee.) October, 1906. Judgment was granted in favor of plaintiff for $700 for an accident caused by a large bobbin flying out of its place when running at a high speed, and striking plaintiff on head, causing injuries which prevented him from performing his usual labors.

There is no provision of the Factories Act that requires that a record of the court proceedings and decisions be kept. But from a sense of showing the result of these decisions to those interested, it would seem that such a provision would serve a very useful purpose. When the manufacturers fully realize their responsibilities regarding the protection of those whom they employ, then will the Inspectors find less opposition to their suggestions. Only a few of the many cases decided during the year are given here.

All of which I have the honor to submit.

Thos. Keilty,
Inspector of Factories.

REPORT OF INSPECTOR ARTHUR W. HOLMES.

To the Honorable the Minister of Agriculture:

SIR,—I have the honor to submit a report of the inspection of factories and workshops in the district assigned to me for the year just closed.

I am pleased to be able to report the steady growth of industrial enterprises throughout my district. New factories are being built and others enlarged to meet the demands of the trade where greater facilities were required. It is also a pleasure to note that where new factories are being erected, a great deal of thought and attention has been given to make them thoroughly modern, special thought being given to the comfort and health of those who are to spend a large proportion of their life inside their walls, by having installed first-class sanitary conveniences, good light, ventilation and heat, cloak and dressing rooms, which in the great majority of cases are fully appreciated by those whom they are intended to benefit. There are some cases, I regret very much to say, where through ignorance or mischief the efforts of the employer to provide comfort has been discouraged. There is nothing that so disheartens an Inspector as to visit a factory and make certain recommendations, and on his next visit find that a certain element employed there have written obscene language on the walls of a lavatory, or to be told that obstructions have been placed in the closets, causing them to overflow, thereby causing discomfort and annoyance to everyone, to say nothing of the irritation and expense to the employer. Such things, I regret to say, have come to my notice, and if an example could be made of the ones guilty of such offences it would be a consolation to a large number.

CANNING INDUSTRIES.

I am pleased to be able to report that there have been some improvements made in a number of the fruit canning industries. There is still room for further reforms. One of the suggestions made has been carried out fairly well, namely, the providing of extra sinks, soap, towels, and an unlimited supply of clean water whereby the employees could at all times use freely of the same. On account of the large foreign element, who compose the majority employed in the fruit canning factories in the Niagara district, something will have to be done to provide improved housing accommodation, as pointed out in previous reports. The overcrowding is something deplorable, many being in shacks unfit for human beings. The roofs are low, the upper storey in some places being used for sleeping quarters, where you could not stand up without bumping your head on the roof, and with perhaps only one small window, and that closed the greater part of the time. In some cases it is impossible to have any privacy, as thirty and forty occupy the one room, and the facilities for keeping clean are not what they should be. I have spoken to some of the managers in regard to placing a proper wash or bath room for them, and in most cases I have been told that they would not use them. Employees working two or three months canning fruit should have something better than a wash basin to bath in and keep clean. In one place the ratio was one wash basin to fifteen people. On account of some of these matters more properly belonging to the Provincial Board of Health, it was deemed advisable that one of the Health Inspectors should accompany me on my trips. Dr. Bell was delegated, and we spent about ten days investigating the conditions, and his report dealing with them will come under that head-

ing. The recommendation I made in reference to having a matron or housekeeper whose duties would be to prepare meals, make the beds, ventilate the rooms, keep the house in a clean and tidy condition, and be responsible for the same, has been carried out in only two of the factories. They speak well of it, but the best evidence was the conditions in which we found the houses, the floors being kept clean and the rooms in order. I have not found as many young children at work this season as formerly, but there are still too many employed. On account of canning factories being exempt from the provisions of the Factories Act governing the age of children, any child able to sit on a stool and wield a knife can be drafted into service. The employers claim that they do not want them around, but they are forced on them by their parents, who say if the family is not given employment, they will not work. The majority of children are composed of the foreign element, who come over here with their parents. I do not know of any good reason why children under fourteen years should be permitted to work in these factories any more than in any other place. The conditions are far from ideal.

Pickle factories, jam factories, and places where any food products have been put up, have had my careful attention.

Apple Evaporators.

Some of these plants I have found in a very good condition, but the majority of them could stand some improvement along the lines of cleanliness. In some cases, the apples are brought in by the farmer and unloaded in the yard. They are mostly windfalls. They may lie for a few weeks exposed to the weather. When they are needed, they are shovelled into boxes and taken into the factory covered with mud and other impurities to be handled in that state by the peelers. If the peelings, cores and culls are going to the dump, not so very much can be said, but in the majority of cases they go either into the press to make cider or pulp or in the kilns to be dried and shipped to Europe, where they are made into champagne. These apples should go through a good bath before being allowed to be used. Some of the girls I saw working on them were in a very sorry plight, being covered with mud from head to foot.

Pork-Packing Industries.

There are quite a number of these places throughout the Province, and I have given them particular attention. Before the Chicago expose, orders had been given to make a good many improvements, and at present they are in fairly good condition. I am pleased to say that I found the owners very willing to carry out the changes suggested. They are certainly very much improved to what they were a few years ago. Three of them have put in entirely new sanitary arrangements, one of them having shower bath facilities for the use of the men, and a very nice wash-room with good closets removed from the work of handling is carried on. Other necessaries in the shape of sinks, towels, soap, and a plentiful supply of fresh water have been supplied, so that the opportunity for keeping clean is what it should be. One of the firms is also supplying those engaged in handling the meats with a couple of good white suits.

Child Labor.

One of the greatest difficulties which the Inspectors have to contend with is that relating to the age of children. The majority of employers are anxious to respect the law, but there are always some ready to take advantage of

every opportunity. In the case of the native-born child, a certificate can be secured and the truth or falsity proven through the agency of the Registrar-General's Department. In the case of foreign born children, no means can be used to prove their worth. In such cases of doubt I have asked that an affidavit be furnished to strengthen the certificate. A large number of the parents do not seem to realize the great injustice they are doing the child by having them enter factory life at such an early age. The time in which a child can secure a common school education is very short, and it only comes once in a lifetime, so every opportunity to have them return to school until they reach the proper age is taken advantage of. One prevailing error that a number of employers have made is to take it for granted that during the summer vacation the Factories Act age limit is suspended. "He is only here during the holidays," was quite familiar to me last summer. I am pleased to be able to state that the number found under age has been small. Some people are under the impression that the factory laws cover all places where children are employed. This is a mistake, as in shops and other places than factories, the age limit provided is ten years.

Hours of Labor.

There are very few places that operate their factory the full limit of sixty hours a week as allowed in the Act. In fact, it is not at all necessary, as the speeding up and the improvements in machinery have more than made up for the decreased number of hours worked. Those places which work the long hours have great difficulty in securing help, as those looking for work want the best conditions and the least number of hours. Some employers have complained of the great difficulty in getting female labor. The opportunities of same having greatly increased during the last few years.

Ventilation.

I had expected to have been able to report that every place within my district where an exhaust fan was necessary had been fully equipped with the same, but I am not in a position to say that. A number are being installed, and I trust they will be properly running in a very short time. I have had some complaints in reference to polishing rooms where, through some breakage, they were forced to close down, and, unlike some other parts of machinery, they were in no hurry to make repairs, as it was not necessary from a producing standpoint. In the great majority of cases, where the system has been properly installed, it has been a blessing both to the employer and the employed. I have been frequently told that on no account would they be without it, as it is possible to keep other parts of the factory in a cleanly condition by removing the dust outside. The employees do not at all times give the care and attention they should. They are careless with the hoods, throw them down on the floor, and the pipes are not cleaned out. Some interest should be shown in keeping these things in proper order. It is such cases which discourage the employer from making other improvements. I have also gone into places and found the fan and pipes in good condition, and not one man using his hood, nor had the hood been used for days previously. The power was being wasted and the plant might as well have been outside for all the benefit it was to anyone. I have told a number of them what their duties are in regard to using them, and I trust in future they will take every advantage of them. Some of the moulding shops are badly in need of better ventilation. Especially is this the case in malleable iron

foundries, where the cupola takes up considerable room in the centre of the shop. The doors have to be continually opened for firing, and the smoke and gases escaping soon fill the shop and make conditions, especially on a damp day, almost unworkable. Some artificial means in the shape of a ventilating fan could be used to good advantage, and I have recommended them in certain places. An Act concerning toilet rooms in foundries has been passed in several of the States, calling for a toilet room of suitable dimensions containing wash bowls or sinks connected with running water and facilities for heating the same, and the room properly heated, ventilated, and protected from the dust of the foundry.

Laundries.

The conditions existing in laundries are gradually improving. More thought has been given to the comfort of the employees than ever before. It is surprising what good results accrue from one factory making improvements, such as removing steam from wash rooms. The other places are compelled to follow suit or lose some of their help, as they soon realize the better conditions which prevail in such places and desire to avail themselves of it. There have been great strides made in the improvement of machinery used in laundries during the past few years, which simplifies and makes the work easier.

Bake Shops.

The Bake Shops Act deals principally with the hours of labor and sanitary conditons. Some complaints have reached the Department in regard to the number of hours worked in some of the Jewish bake shops. Some difficulty has been experienced in arriving at the true state of affairs, as some of them hide behind the excuse that they do not understand English. To overcome this difficulty, and to provide against a recurrence in future, the section relating to hours of labor in the Bake Shops Act is being translated into the Yiddish language. A copy of both languages will be posted in each shop, and any infraction of the law will be prosecuted. A new Bake Shops Act has been passed in the States of Connecticut, and section No. 2 reads: "No room or rooms either wholly or partly under ground, not now used as a bakery, shall hereafter be used as a bakery. No room or rooms wholly or partly underground now used as a bakery, which shall hereafter be closed, shall be again used as a bakery." By this means they will in time eradicate the underground bakeshop. If there is any workroom which should have plenty of fresh air and sunshine, it is those places where food products are put up and go to the people. It is almost impossible to keep some of them clean and in a wholesome condition in dark and dingy places. There are many underground bake shops in the Province. Bake shops should be limewashed at least twice a year, as the smoke from the ovens soon darken them up.

Machinery.

I have given careful attention to the guarding of machinery. No matter how expert the mechanic is, there is no reflection cast upon his ability as a mechanic by using a guard. In fact, he should be glad to set the example. Two cases came to my attention where men refused to use a guard on a buzz planer, claiming that it did not fully protect. This can be said of many guards, but if they minimize the danger they are doing good work. In speaking to manufacturers of machinery I have tried to impress upon them the necessity of guarding all exposed parts of gearing, projecting set screws, and

placing belt shifters on all tight and loose pulleys. If the purchaser would also insist on having these matters attended to, it would not take long to bring about the reforms desired. It is so much easier and cheaper to have these things done at the factories where they are made than after they have been installed. The machines which are imported from European countries are perfectly guarded, as time and attention has been given to that feature of them. The shifting of belts from tight to loose pulleys or *vice versa* is always attended with a certain amount of danger when done by a stick in the hands of an unskilled man. I have at all times notified the owner of a factory to provide proper belt shifters.

A special report illustrating many different methods of protecting machines will be issued shortly, and I hope it will be of great benefit to those employed around machinery.

Overtime Permits.

There have been more than the usual number of permits issued this year for overtime, owing, no doubt, to the prosperous condition of trade existing at the present time. Some complaints have reached me as to the amount of overtime to be worked in any twelve months. The regulations of the Act in this respect are: "The hours of labor for women, young girls, and children shall not be more than twelve and a half in any one day, nor more than seventy-two and a half in any one week, and such exemption shall not comprise more than thirty-six days, in the whole, in any twelve months; and in reckoning such period of thirty-six days, every day on which any child, young girl, or woman has been employed overtime shall be taken into account."

With machinery speeded up to the highest tension, in very many places the girls on piecework claim that when they have worked nine or ten hours a day they have no desire to work any overtime. They do not object to a few nights to make up for a breakdown or something unforeseen, but their objections are to the systematic overtime which comes in some places as regular as the seasons come around. Many employers realize the injustice of it, and would not ask their employees to work an hour after the regular time. One manager informed me that they had worked a considerable amount of it; and he had tested it by cutting off the overtime for a week, and he found that they produced the same in the short hours as they did in the long, and they were working piecework. He had extra expense in the shape of power, heat, light, etc., to meet. It means that for three months, three nights a week until nine o'clock can be exacted from the female help. If they refuse to work, things are made unpleasant or they lose their situaiton. If the limit were reduced, it would meet the wishes of a great many who are compelled by force of circumstances to work it.

Fire-Escapes.

Considerable attention has been paid to this important feature of factory life. While a number of factories seem to have been built with one aim in view, that is to suit the wishes of the fire underwriters and secure insurance at the lowest possible cost, yet no attention has been given to the means of escape in case a fire happens to take place during working hours. In my opinion having only one stairway in the building is a mistake, as a factory should have at least two exits at opposite ends of the building. When they are not so provided, a fire-escape is the next best thing. While it does not compare with the tower stairway by any means, it is there when required.

Quite a number have been erected during the last year. I have had very little objection raised when the necessity was pointed out.

Boiler Inspection.

I have had a larger number of reports from those having boilers not insured than last year. I have tried to impress on them the necessity of having at least one good inspection a year. The law has been changed somewhat during the last session to advantage. As far as inspection goes, the law should be broad enough to cover all boilers used for generating steam. There is a large number used which do not come under the scope of the Inspector. Five persons employed constitute a factory, and therefore he has no right to ask for a report of some. The danger is greater in proportion in a small place than in a large one, for the reason that a qualified man is generally employed to look after the large plant, while with the small one in many cases it is no one's particular duty to attend to the boiler, the one nearest doing the firing or turning on the water. The only surprise to me is that there are not more explosions than there are. All possible safeguards should be adopted where steam boilers are used.

Complaints.

Quite a number of complaints have been received dealing with many subjects. We are always pleased to receive and rectify them, if they come under the scope of the Factories Act. No matter how careful an Inspector may be, there are many things liable to escape his notice. He may go through a factory and certain machines are not in operation, or only part of the force working; or the roof may leak, and unless it happened to be a rainy day, matters like these would escape his attention. We are pleased to have these things pointed out to us. No name is signed to a large number of complaints received, and this is all right where the complaint is well founded; but we receive some complaints that do not come under our jurisdiction, and are therefore unable to make the explanation. We prefer having the name attached, as all communications are treated confidentially.

Elevators.

Elevators and hoists are always a source of danger, but where they are protected according to the law, the danger is very much minimized. The accidents from this source have been greatly reduced since the passing and enforcing of the law governing them. The very best protection they can have is to allow one man to operate them at all times. The gates, cables, and other working parts are better looked after, and any weakness is remedied. I realize that this is sometimes impossible, as they are not used frequently enough to keep a man engaged in that position steadily. There are a few of the old-time lifting bars still in existence, but they are gradually getting less. In some cases, owing to the distance between floors, it is difficult to secure the headroom required to use the gates, even if made in sections.

An abstract of the Factories Act has been posted in all factories.

A list of accidents reported during the year is appended herewith.

I have the honor to be,

Yours most respectfully,

Arthur W. Holmes,
Inspector of Factories.

REPORT OF INSPECTOR JOHN ARGUE.

To the Honorable the Minister of Agriculture:

SIR,—I have the honor to submit a report of the inspection of factories in my district for the year ending December 31st, 1906.

In the first place I would note a steady, and even rapid, increase of industrial and commercial activities everywhere. New industries have been established, and old ones have been expanded; new factories are rising, and old ones are being improved and enlarged, both classes showing a steady advance in all that tends to promote health, comfort, safety and contentment of the employee, as well as the true interests of the employer. It would be well, however, were the Inspector duly notified, in each case, of the opening up of new establishments, as the Act requires, and which is not always done. On the whole the outlook is good, and the progress towards an ideal condition of things as satisfactory as could be expected under all the circumstances. Both the spirit and the letter of the law seem to be very generally complied with, and the Inspector is received with cordiality and treated with respect. Nevertheless, there is still room for improvement, and perhaps always will be.

SANITATION.

As to sanitation and other matters, if I offer but few remarks it is not that I would pass it over as of minor importance, but because the subject has been so often and so ably and thoroughly gone into by others. In all my inspections I make this a prime question, and I deem an exaggeration of its importance an impossibility. Health there cannot be amid foul surroundings and a fetid atmosphere, and of these we have still too large a stock on hand. To bring these things up to the ideal is no light undertaking. It looks as if foul air would always threaten the city, and foul water the village. Where no sewers exist how are you to wash away the daily accumulations of solid and liquid filth? As to ventilation, I sometimes doubt whether our best contrivances are up to the mark,—whether indeed we understand the subject rightly at all. The books say foul air ascends, so down come the windows. But carbonic acid gas, so plentifully in crowded rooms, does not go up, but down. And this gas means death. I believe the genuine ventilator, as well as the genuine fire-escape, has yet to come. Till it does, where better may not be as a crude and partial relief, I would say: "Let all your windows and doors be thrown wide open the first thing in the morning, the last in the evening and during the noon hour (that is when the workrooms are empty), and don't spare the firewood." This would at least greatly lessen the evil. Neglect of this simple expedient, not hard work at all, pales the country schoolma'am's cheek, and sends home her scholars crying with headaches. When science and invention fail, common sense may as well be given a chance.

MEALS.

Foul air and bad drainage and nauseous uncleanliness generally coexist with sallow, listless, woe-begone employees, but it is possible to ascribe too much of this misery to these causes alone. They do not do all the mischief by any means. There is another quite distinct and separate secret of ill health—fast eating. Women and girls sometimes ask to have the noon hour reduced to half an hour, so as to get free by so much the earlier in the evening.

This is not wisdom. Half an hour for dinner is too short; even an hour is not enough. I have made a special study of the question, and have had abundant opportunities for observing how people eat and suffer afterwards; and my deliberate decision on the matter is that most of the minor ailments which afflict the people of this country, and especially our factory and farm populations, are directly due—not to germ, but *to bolting their food.*

I once sat at a dinner in an hotel in a busy factory town in Maine. Suddenly, a gaunt, sallow crowd of manifest hypochrondriacs rushed in from a factory, rushed to the table, rushed down their food, and rushed out again, some of them actually snatching away their slices of pie to eat as they ran. These people were skin and bone, indigestion and woe. No wonder. God never yet made a stomach that could stand *that.* And I have seen farmers' sons here in Ontario swallow six slices of bread while I ate one; then seek relief in pills or the doctor. They did not eat, they did not chew, they floated the big chunks down on a flood of milk or tea. To such eating there is just one present end, dyspepsia, and another not far off, a chronic hypochondria, or nameless misery.

People whose nerves or muscles have been on the stretch, who have been going at high speed, will naturally eat at a like pace, unless they first get time to slow down; and indigestion follows. No one should eat instantly after swift movement of limb or brain. Between work and dinner the whole man (or woman) should have time to quiet down and become calm and composed. Their dinner should be eaten as slowly as possible, with little liquid or none, in an airy bright room, everything neat and clean, the whole seasoned with cheerful talk, and all the fun obtainable. Next should come a half hour of total relaxation, absolute rest, not even a jest or a word. Neither man nor beast should work right after a hearty meal; let the stomach get a good start; it has all it can do. At this juncture, exertion, eagerness, anxiety, haste,—all these hinder its work. Could I have my way, there would be, in all factories, fifteen minutes between work and eating; thirty at the very least at the table, and thirty minutes more for solid rest before resuming work. This is below my ideal time for dining, though probably above what the employer would care to grant, even as it is above what the law demands. Yet I firmly believe that a factory in which this time, or even more, were granted, would show more work done and better done, in a year, than one not allowing it. Vigorous people do vigorous work.

I have dwelt on this head for two reasons: (1) Its extreme importance in itself; and (2) the little attention it seems to have hitherto received. Even a sanitation absolutely perfect would fail to give us healthy operatives so long as these had to gulp their meals and resume work too soon. Doctors now say we eat too much. I would say we eat too fast. Let a man eat slowly and thoroughly masticate his food, using fluids very sparingly, and I will risk his eating too much. In fact, he cannot. His appetite is gone before he can gorge, and he will get more nourishment and strength from his moderate meal than the bolter gets from his immoderate one, and with vastly less tax on his whole digestive apparatus. He will never know dyspepsia with its pains and horrors, and will whistle where others moan.

Hours of Work.

Closely connected with the foregoing as bearing on the physical well-being of the operative and his consequent efficiency is the question of work hours. I am not a little pleased to be able to say that the great truth has begun to dawn on the minds of manufacturers that too long hours are not *profitable.* And they are not. True, a man working ten hours a day for

one day or one week will produce more than he would have produced had he wrought but eight hours a day. Will this be true at the end of the year? I doubt it. What I do not doubt is that the man is now jaded where, on the eight hours, he would have been fresh, his produce being perhaps no greater, very likely less. At the end of twenty years, where is he? Done or dead; though he might have been very much alive. I don't like that word *overtime*. Ten hours a day, six days a week, is long enough for any one to work; and in the long run eight hours would pay the employer as well, and the nation far better. Yes, the nation. *It* has a say in the matter. We cannot allow "business" to break down our workers, wearing them out before their time. Not thus shall we be a brawny people. Nay, the very interest in which they are sacrificed will itself be the chief sufferer in the end. A puny, tired-out army of operatives, ever begetting a progeny punier still, cannot stand against foreign stalwarts in either field or factory. Alertness, bounding vigor of body and mind are essential to the production of good work and much work of any kind and anywhere; and a nation that shall worst us in factory or in field must first be more vigorous than our own. The route to this commanding position does not run by the fifteen-hour day, or the twelve or even the ten. I am for short hours filled with strenuous work in both factories and schools; but live work never yet came out of jaded frames. It is not the tense strain that jades, but the tense strain held too long. A bow too long bent loses its spring. Teachers and manufacturers should never forget that. The sixth hour in school is one too many, and so is the tenth in the factory or the shop.

Children.

But if most children get too much of school, what shall we say of the unfortunate remnant who get far too little, or even none at all? There are in our factories and shops not a few young people who can neither read nor write, and some under age who ought to be at school. True, the number, comparatively, is not great, but then it should be a naught. According to modern ideas, education is the birthright of every child, and the State imparts it in self-defence and for self advancement, to say nothing of the child's purely personal interests. Now, to prejudice these interests, wholesale and for all time, by erecting a wall between the child and what should fit him for the battle of life, is dire cruelty to him and dire danger to the State. With us this evil, as far as our factories and workshops are concerned, has not attained, as yet, very formidable dimensions, and is, I think, on the decrease. But we cannot diminish it too fast. In the States it is an alarming and swift growing evil. In that nation there are to-day between two and three million children in factories who ought to be at school, and the number has multiplied amazingly of late years, and still multiplies. Now, whatever of theirs we imitate, let it not be this. Poor little ones, stunted and crippled in mind, body and soul; what a sad destiny is theirs! Angels might weep when they contemplate the vast army of little creatures shut in from the sunlit fields and all the dear delights of expanding childhood, forbidden to grow, or to know, or to go; bound ten, fifteen hours a day to the ruthless whirling wheel of trade, and doomed to dwarfage, feebleness and a bedarkened existence through all the coming years.

Machine Guards.

But, were all our operatives educated and buoyant with the most roseate health, what should that avail to him cut in two by a saw or whirled to pieces by a belt? Old England forever! There human life is a sacred

thing. From it greed must take a back seat. This is seen in her law forbidding any machine to be offered for sale by its maker until its more dangerous parts have been properly guarded. This law is good, and it is needed in Canada. Our manufacturers affix no guards or a few grudgingly, and later guardings in factories are not always easily procured. As matters stand at present, the main principle kept in view by the manufacturer of a machine in Canada is the labor-saving one. This same principle guides the manufacturer in the States, where life and limb stand second to gain. Hence, our man should not get all the blame, for he has to compete with makers not bound to affix guards. The remedy would seem to be, first, a higher duty on machines; then a stringent law for Canada like that of England above referred to.

Elevators and Fire-escapes.

Under this head I have not much to offer additional to the remarks in my last year's report. In my district the general condition of affairs as to these important matters is, on the whole, fairly satisfactory. But the Gilmour House calamity at Ottawa since that report was written should, I think, convince everybody that my words in that report were not too strong. "The ideal escape is yet in the womb of the future. The inventions and appliances hitherto reached seem amazingly crude and ineffective *in practice*, in an age pre-eminent above all other ages for inventive ingenuity. Except the lurid spectacle of a fire in mid-ocean, what sight on earth is more awful than that of some many storied building alive with helpless human beings and roaring with flames." I may add that it was the elevator which wrought the swift destruction in the Gilmour House case. Its mighty draught whisked the flames up its dry woodwork and through every storey in a lightning flash. Moral: Metal instead of wood.

Conclusion.

I have not burdened this report with minute details or special instances. The minutiae in my district are doubtless very similar to those in others, with which I presume you are already sufficiently familiar. My inspections have been as close and searching as I could make them, and my copious notes would furnish matter for many pages of detail. I have thought it better, however, to deal with the subject in a more general manner; to discuss to the best of my poor ability great principles, and to dwell on matters of vital importance, not only to the operative, the employer, and the manufacturer, but to the legislator also—in short, to every class in the community and to the nation at large.

A list of accidents reported during the year is herewith appended.

All of which is respectfully submitted.

I have the honor to be, Sir,

Your obedient servant,

John Argue,
Inspector of Factories.

REPORT OF MISS MARGARET CARLYLE.

To the Honorable the Minister of Agriculture:

Sir,—I have the honor to submit to you the following report of work done during the past year in the western part of the Province of Ontario, having completed the inspection of factories, workshops, and mercantile establishments for the year 1906.

It would be tedious for me to enumerate all the improvements made. The sections relating to the securing and maintaining of a reasonable temperature in factories and workshops, together with the ventilating and providing suitable and sufficient sanitary conveniences, have during the past year had the constant and systematic attention of the inspectors. Much excellent work has been accomplished, and that with but little friction.

There can be no denying the fact that the factory laws have been a vast and important element in improving the conditions of the workers in manufacturing establishments, workshops, and mercantile houses. There is probably no enactment of Parliament which has borne better results. While the working of the Factories and Shops Act runs on each year with little opposition, irregularities and minor breaches are, of course, discovered. Only a very small proportion of the outcome is, however, wilful opposition or flagrant indifference. The year just closed has been one of more than usual activity. The increase of establishments of various kinds entails a vigorous and careful inspection. Every department and room in the factory demands a careful inspection. I am pleased to inform you that I found scarcely an idle shop. Many new ones are now under construction or have commenced operation. Old factory buildings which have been abandoned for years as worthless are being repaired, filled with new machinery, and put into working order. Not only has their number increased, but there has been a marked increase in the number of employees.

Mode of Wearing the Hair.

The regulation as to how young girls must put up their hair during working hours in factories in which machinery is running, is hard to enforce. Young girls prefer to run the risk of being scalped. In spite of the progress we have made along this line, we note too frequently neglect on the part of the foreman and managers, or insubordination on the part of the girls themselves. In the factories where it is customary to employ many young girls the risk with regard to this matter is considerable. During the year we have impressed on the minds of employers, the necessity of young girls keeping their hair securely fastened up during working hours, as a precautionary measure against accident. To this end, we have had printed notices hung up in conspicuous places in the factories. If in the future we have to deplore the occurrence of an accident of this kind, the Inspectors may fairly claim to be exonerated from any share of responsibility, as it has been our earnest endeavor for years past to awaken both employers and employees to the serious risk taken by a continuance of the dangerous fashion of wearing flowing hair while in the vicinity of machinery.

Cigars.

The chief requirement—a well ventilated factory provided with the proper means of removing dust and foul air—is seldom, in my experience, found in cigar factories. Directly the cold weather commences, the win-

dows are all closed. It is more or less a sedentary occupation with less movement or change of position than perhaps in any other trade or business. The close atmosphere of many of these cigar workrooms, with their crowded floor space, is most unpleasant to the senses. The strong, heavy odor of tobacco in stuffy rooms is almost empowering. I was surprised on inspecting some of those factories to learn that the workrooms are used during the night for drying rooms for the tobacco leaf, which is spread upon the floors at night. The windows are all closed, of course. When the workers arrive in the morning, the leaf is gathered up from the floor, then the workers sit down to their cigar-making without opening windows or in any way airing the rooms. If the law would prohibit the employment in cigar and tobacco factories of girls under sixteen at least, I think it would very greatly protect their health. It has been decided by law that the smoking of cigarettes by boys of immature years is injurious to their physical, mental, and moral natures. Laws have been passed controlling their sale and use by those under a certain age. There is no question as to the effect upon the strong, robust boy. What must be the effect, then, upon the more delicate and complex organs of young girls just entering into womanhood, who for eight or more hours out of the twenty-four breathe the dust and fumes of tobacco? In many cases, too, they have poorly ventilated workrooms. I believe this subject is worthy of more attention than it has yet received. In spite of all that has been said and written on the subject, I noted that in some factories, the practice of biting and licking cigars was as prevalent as I have found it at any time. It is undoubtedly the quickest way of finishing them, and while discouraged by employers and managers, rules against it are not really enforced.

Clothing.

I may say that, generally speaking, the condition of the tenement buildings used by the manufacturers of clothing has improved in sanitary matters, cleanliness, and ventilation, but much remains to be done. Long strides will yet have to be taken before the conditions can be favorably compared with many other industries. The floors of many of those workrooms are in a very dirty condition. The waste and refuse from the manufacture are not swept up as regularly as they should be. Often refuse is pushed into a corner where it accumulates in large quantities. Again, I find that in many cases the floors are not regularly scrubbed, and there is no reasonable excuse for this uncleanly state. Clothing workrooms are seldom models of cleanliness. More attention is being paid to ventilation and sanitation in the new clothing factories, and one can honestly say that in the more modern ones the ventilation is good.

Ventilation.

This is, as usual, one of the difficult problems of factory inspection, owing, in many cases, to the structural condition of the buildings. The complaints of some employees to the effect that the atmosphere is neither agreeable, comfortable nor healthful are in many cases not without foundation. In many workrooms, at the present moment, the only means of introducing fresh air is the opening of windows. For the release of vitiated air, very few workrooms provide. The question of how to insure efficient means of ventilation, heating, and lighting in these rooms has been one of great difficulty for all concerned. The modern open air treatment has

been fashionable among people who have only their own convenience to consult in the matter of open doors, open windows, and thorough draughts. Generally speaking, this does not commend itself to factory and workshops operatives. With many of these the occupation calls for little change of position. We have had some complaints of want of ventilation in work rooms, and there is no duty laid on inspectors more steadily carried out than that of instructing and persuading employers on this point. The fear of fresh air dies hard however, and fear of cold draughts keeps many silent, who are conscious that they are breathing foul air. It is surprising how slow some employers are, when left to themselves in the way of initiating reforms and remedying defects. It is pleasant to find in visiting new workshops that a very large number of employers fully realize the advantage of airy rooms and cheery surroundings, and it is even more interesting to note the effect on the workers' health and spirits. One feels certain that more and better work is being done than is possible in gloomy and ill-ventilated places. In my opinion, if electric light in the place of gas, could be installed in every workroom, it would not be long before the result would show itself, for it cannot be denied that where the workers labor under hygienic conditions their productive powers are increased. Where there is a foul atmosphere there is always brain fatigue. The purer the air of the workrooms, the greater the amount of work turned out. Workrooms have sometimes to be lighted artificially for several weeks at a time. There can be no doubt that the means of lighting employed have a direct bearing on the health of the employees. I know of no condition more oppressive than the atmosphere of a gas-lit workroom. The factory opens, perhaps at 7.30 or 8 o'clock a.m. and closes at 6 p.m., and during several hours of the day, in some instances, and some places during the whole day, is lighted by gas burners. When a room contains the largest permissible number of workers, and there is gas light in the proportion of one to every third or fourth person, the atmosphere becomes unmistakably bad. These gas lights also lead to unreasonably high temperatures. I have known workrooms (gas lighted) register as high as from 79 to 92 Fahrenheit. Just before Christmas, I inspected a number of factories and workshops in which women were employed, working overtime between 7.30 a.m. and 9 o'clock p.m. It was remarkable to note the difference in the atmosphere of the rooms lighted by electricity and of those in which gas formed the means of lighting. In calling the attention of the employer to this fact, the universal answer was, that the workers never complained, but to me, their pale, anaemic looks were more truthful than pages of written complaints. I think the feeling of intense weariness, of which so many of workers complain in the afternoon, could be reduced by a thorough change of air in the workroom during meal hours.

Sanitation.

There is little to add to what I reported last year on this subject of sanitation. A good deal of improvement is noticeable all over the district. The new factories, generally speaking, have excellent sanitary arrangements, and great pains appear to have been taken to provide for the comfort and recreation of the employees. Many substantial improvements have been made during the year regarding sanitation. Complete reconstruction, requiring some months at least to carry out, has been made in several cases, which we have had in hand. It was not necessary to condemn all the accommodation, but much of it was unsanitary and out of date.

The question of maintaining good conditions in sanitary arrangements in the various establishments is an extremely vexing one. The procuring of good arrangements does not always insure good results. Many instances could be cited in this connection where there are good and even excellent arrangements, and yet through the carelessness of some of those who use, and also the lack of attention on the part of those in charge, the conditions are often rendered poor. It will be readily seen that with so many places under their care the Inspectors cannot always be on the spot, and however zealous they may be they cannot succeed in making the conditions very much better than those who ought to be most interested would have them. Some complaints have been made of the unsanitary accommodation. The chief cause of the complaint seems to have been the unsuitability of the closet accommodation, namely, its being in direct communication with the workrooms, and in some cases, the entire absence of privacy. Sufficient attention is unfortunately not yet given by all manufacturers to the suitability of the sanitary conveniences for women. Of course, there are many manufacturers who have manifested a very commendable interest in the well-being of those in their employ by providing for their use dining rooms, dressing rooms, lavatories, reading rooms, all beautifully fitted up with a matron in charge, thus voluntarily going beyond the requirements of the law. Some of those dressing rooms have a door made of slats or wire screens so that the clothes can be properly aired. We also find manufacturers who provide head coverings, waists, aprons, etc., which are properly washed and changed regularly. Some of the lunch rooms provided leave a great deal to be desired. They are little more than dirty holes with dirty wooden tables. I am afraid the employees themselves are many times to blame for the deficiency of their dining rooms. They take no pride in keeping the place nice or even tidy, and leave it littered with dirty papers and fragments which they are too indifferent to burn or otherwise destroy. Dining rooms should be kept at a reasonable temperature. Some of the rooms are so cold that they cannot be used by the girls. I have found that the lighting of waterclosets at night is seldom done. In many places they state that lighting them would be placing a premium on laziness, but this applies equally by day as by night. When I have pointed out the necessity, both from sanitary considerations and moral grounds, for efficient lighting for sanitary conveniences, in most cases the employer has expressed agreement, and I do not think any great difficulty will be encountered in obtaining artificial lighting in those places. I think there are many risks encountered through faulty means of lighting, and that accidents are considerably more numerous in the winter than in the summer months. I venture to think that this is a fact. On my inspection of factories during the time of lighting up at night there have been brought to my notice several instances of very bad lighting on staircases and near machinery. I think it should be compulsory that halls and stairways in tenement houses should be properly lighted. In New York city and Buffalo a light must be kept burning in public hallways on each floor during working hours except where natural light suffices. This was deemed necessary in the interest of public morality, and particularly in the tenement buildings filled with the small workshops of clothing factories. As regards cleanliness, an immense amount of routine work has been done, both by notice and by recommendations going further than a formal notice would go to those willing to be guided. Whereever necessary, I induced the employer to provide suitable washing arrangements for the use of the employees. Sanitary matters in towns, generally speaking, have been in as satisfactory a condition as existing circumstances

permit. It is useless to hope for anything approaching perfection in this connection until the long-looked for sewerage system which at last has been commenced in many places is completed, thus enabling factory and workshop owners to connect with sewers.

Temperature.

There is no subject which appeals so much to the employees as that of temperature, and nothing one has more pleasure in remedying, if possible. I do not think the employees send complaints unless they are really uncomfortable. The means by which heat is obtainable do not appear to concern them unless fumes causing headache are given off. Want of heating arrangements has been noted in the sorting rooms of laundries, and several complaints have been received in regard to such places. The private dressmakers are always difficult to persuade upon matters of heat and cold. In connection with the work they seldom appear to consider that an excessive amount of either one or the other has a bad effect on the girls. I have received complaints from them, and my own observations have caused this to be remedied in a measure. In many cases, we have had thermometers fixed in workrooms. Some of the complaints relating to temperature are of excesive cold rather than that of heat. It is the overheated workroom, however, which gives most trouble. This, no doubt, is because the cold is more easily dealt with, being due merely to the absence of adequate means of heating, which can be easily supplied, while, on the other hand, excessive heat is generally either caused by the process or required by it.

Children.

Notwithstanding your Inspectors' efforts, it is undeniable that there are some children under the prescribed age employed. The subject is one of the greatest issues forcing itself upon the Canadian people of to-day, and one we cannot neglect, endangering the very foundation of our country. The child labor laws of our Province are among the best, and I believe are well enforced. To secure the best results, however, the child labor and compulsory educational laws should co-operate—the one keeping the children out of the workshops, factories and mercantile establishments, and the other placing them in school. These laws should be plain and simple. While looking over the files of age certificates brought by children and signed by parents, one is astonished at the numerous instances of bad faith on the part of parents, who compel their children to leave school for the factory, and who do not hesitate to make a false declaration to prevent the employers being troubled by the Inspectors. In view of the mixed population and the ever-increasing number of immigrants, it is impossible to check many of those statements. We are often astonished at reading several articles in newspapers deploring the fact that a large number of children under age work in factories and escape the supervision of the Inspectors. If those who discuss the question attempt to judge the age of children by their appearance in observing them as they come out from the factory, they will find it cannot be done. Many people suppose that the factory laws reach all places where children are employed, but many are employed in places other than factories. Our laws draw a distinction between children in manufacturing and mercantile houses. We believe that if the law is beneficial in the one instance, it would be equally so in the other. The children employed as cash or parcel girls or boys in some of

the stores have duties fully as arduous as if they were employed in factories, and their hours are just as long in busy seasons.

Fire-Escapes.

Continual vigilance is necessary in this matter, for not only do unused outlets become unusable, but internal changes take place in the factory by which storerooms are turned into workrooms, the number of workers are largely increased, or processes are introduced, which make the risk of fire greater. It is of importance, where outlets are not self-evident, to ascertain whether employees have any knowledge of them. We cannot but feel anxious for the safety of the persons who, because there are not a certain number employed in the workshop, have no means of escape in case of fire except by one stairway. I have dealt during the year with blocked stairways and locked doors, and find these are matters requiring constant vigilance.

Elevators.

The Factories Act requires a report of all accidents occurring in the manufacturing establishments. We should have a section, I consider, in the Shops' Act to the effect that the mercantile establishments should report accidents in like manner whenever the accident results in the death of the employee or causes bodily injury of such a nature as to prevent the person from returning to work within six days after the occurrence of the accident. Very recently we have had some serious and fatal accidents in connection with our mercantile houses. I think this question is one which should receive more consideration. Elevators are a source of many serious accidents, and the remedy seems to me to be a more stringent legislative enactment to the effect that none but capable persons be allowed to take charge of elevators where so many thousands of people are ascending and descending from day to day. Extreme watchfulness should be exercised on the part of those upon whom the responsibility rests. The sacrificing of human life, and the crippling and maiming of human beings, should not be lightly overlooked.

Seats.

The occupier of any shop in which females are employed shall at all times provide and keep therein a sufficient and suitable seat or chair for the use of every such female, and shall permit her to use such chair or seat when not necessarily engaged in the work or duty for which she is employed in such shop. In many respects the women employed in mercantile houses are under a more wearisome strain than those employed in factory and workshop. There is double exaction from employer and customer, and a more cramped and confined position. The injury to the health of females employed in mercantile establishments in consequence of their being compelled to be constantly on their feet is undeniable. To require her to become unnecessarily exhausted to simply gratify a silly whim looks too much like tyranny. In many cases, a female can perform her duties just as well sitting on a chair, stool, or bench, as she can standing.

Canning Goods.

The canning of goods in all its details is not an attractive business, but when it is carried on in well lighted, sanitary, clean, airy and well drained factories provided with washing appliances, dressing rooms, also if the hours or conditions of work were regular and reasonable, many of its objectionable

features would disappear. A good deal of progress in the way of improvement has been accomplished this year, but still there remains considerable to be done. It is surprising to find how little attention is paid to cleanliness in some of these places. Even in those cases where the strict letter of the law is not actually violated we constantly find conditions which cannot but be injurious to the workers, and must go far to hasten the decay of perishable articles. We do not propose that such quarters should be converted into a parlor or drawing room, but simply that they should be placed upon the same level as to health and cleanliness as in other lines of trade. Some of those factories are old, and so dirty and so unsuitable in every way to the requirements of the business carried on, that one feels quite at a loss to decide what steps short of the closing of the premises could be taken to bring them into conformity with the Act. The floors are uneven and undrained or badly drained. There is no mechanical or other means of removing the steam. The walls have been limewashed, but the limewash chips and peels off the old rough walls. There are some of those factories which show that the manufacture can be carried on in a thoroughly modern and cleanly fashion. These are in one's mind when employers of the other class who insist on the impossibility of observing the conditions of keeping the floor in a good state, owing to the acids of the fruits, or keeping the factory clean because the work so tends to make it dirty. In many cases we find those factories in such a low standard of sanitary accommodation, not only of sanitation, but also of insufficiency and unsuitability. I confess to have been appalled at the provisions made in the way of sanitary conveniences for women and girls employed. Workers come and go in their old and dirtiest garments. We are not surprised that this is the case. Employers can have no grievances when they make no provision in this matter. Every canning factory should be supplied with a dressing room where the employees could change their clothes. It would be a good thing if they were compelled to have a change of working clothes, cleanly washed, regularly, also good wash rooms with a good supply of soap and towels. Employers who have sufficient intelligent interest in these matters to make the experiment, quickly find their profits. This has been found in cases where the outside public have no direct interest in the matter. What can be said that is not self-evident as regards employment in food-producing industries. I think it cannot be disputed that the business and social fabric of our present civilization rests mainly upon confidence. Neither will it be disputed that if there is a single article in which we all would desire to have absolute faith and perfect confidence, it is the food we eat. We wish to feel that its origin and its history from its beginning until it appears on our tables are an open book. Many of those goods are very much handled in the making. The condition of the hands, and sometimes the lack of proper washing conveniences, are matters which would be probably more disturbing to the consumers than to those engaged in handling them. Public sentiment demands progress in these directions, and intelligent men of business understand that no substantial success can be achieved in the face of adverse public sentiment. To recognize and to defer to this sentiment is therefore a characteristic of the alert and progressive business man. It is his business to do so, and it is not business to neglect or undervalue it.

Rags.

Considerable improvement has been effected in rag sorting rooms this year. I found that in most of the workshops the rags were merely rough

sorted, buttons and metal fastenings cut off; then the rags were packed in bags and forwarded to the paper mills. Very little dust is found to be given off in the sorting process, and in no case has any physical injury to the workers been traceable to this employment. Most of the workers I found were well advanced in years, and they state they have never felt any ill effects from the dust. In visiting some of these places I have had complaints of their coldness in winter. Rag sorting is of necessity usually carried on in rooms where the workers are distributed over a large floor space, and the provision of means of heating means considerable expense. There is, therefore, great reluctance to provide these, and the fire risks of the industry furnishes a ready excuse for the employer.

There is a minunderstanding which has obtained place in the minds of many well-meaning people concerning the powers of Factory Inspectors. They imagine, because the Inspectors have the authority to visit all factories, workshops and mercantile establishments, that consequently they were clothed with authority to rectify all grievances and remedy every abuse which exists in these establishments. While some people may imagine that a long list of prosecutions is a convincing indication that the law is being enforced, our experience is that compliances can be as readily obtained by proper diligence and quiet methods on the part of the Inspectors.

I have the honor to be, Sir,

Yours most respectfully,

MARGARET CARLYLE,

Inspector of Factories and Shops.

REPORT OF MRS. JAMES R. BROWN.

To the Honorable the Minister of Agriculture:

SIR,—I have the honor to submit the following report of the factories, workshops, and mercantile houses in my district for the year 1906.

In reviewing the work since my last report there is very little to add to a statement of the general duties that are required in factory inspection. It is very difficult to give an exact report of the work done.

I have gone over my district very thoroughly and devoted most of my time to the places requiring more careful attention. Speaking in a general way, I found most manufacturers willing to do anything consistent to make their factories and workshops as safe as possible. A great many manufacturers try to improve the condition of factory life, not only in perfecting machinery, but also in seeking the personal welfare of their employees. The motive for a better standard has obtained a lodgment in the mind of the employers, who are anxious to have all the comforts for those employed. It is becoming almost a universal desire to do whatever is conducive to the welfare of the workers with no more delay than is necessary. Of course, a few objectors are always to be found, but with a little time and patience they finally comply with the suggestions made.

THE WORK OF FACTORY INSPECTION.

Few people, compared with the great whole, understand the real value of thorough factory inspection. Factory inspection to be effective must be thorough; to be useful it must be comprehensive; to be valuable it must be minute. Human life cannot be weighed in the same scale where you would balance the commodity which measures the value of commercial products—dollars and cents. Mangled bodies, broken limbs, and physical suffering can only be excused when the country has done everything in its power to protect those whose daily work brings them in contact with the machinery and its surroundings by which the daily wants of humanity are supplied. The death of any laborer caused by unprotected machinery, unsafe factory buildings, or neglected sanitary conditions, cannot be excused on the plea of poverty or ignorance of surroundings.

Factory inspection is a necessity demanded by the age. Its benefits are felt alike by the employer and the employed. Protection to the man who invests his money in manufacturing is as essential as to the man who invests his labor in operating the machinery provided. Their interests in many respects are identical. Their mutual interests demand a firm enforcement of the law.

Under general inspection we find, in addition to the guarding of machinery and the prevention of accidents, such matters as the employment of males and females in factories and workshops, enforcement also of regulations concerning the employment of children, means of egress, safety of elevators, hours of labor, suitable sanitary conveniences, ventilation, seats for females, heating, lighting, etc.

Without labor and the laws to govern it there should be none of the comforts or requirements of life. Without labor, nature would be practically unproductive, or her productions almost useless. There is no greater characteristic of this century that the feeling that labor should be relieved of its difficult surroundings and unnecessary burdens. The time was when any kind of a building fitted with any sort of appliances was considered

good enough for working men and working women, but with the advance of civilization, education, and morality, those crude ideas are passing away, and the conditions of the laboring classes are undergoing a constant improvement.

Cleanliness.

I find a marked improvement in the matter of cleanliness, and employers are fast coming to give the personal comfort of their employees, and the means of cleanliness, more careful consideration; yet much improvement could be made in this direction. There is nothing so commendable or more necessary about a factory than cleanliness, and that especially among the personal customs of the employees. Employers prefer an employee who is neat in his or her work and person, yet we sometimes find no provision made whatever for the cleanliness of the workers, and ofttimes the facilities afforded are provided from their own resources. It should, I think, be considered an absolute necessity in the construction of a factory to provide a place available to each floor with proper facilities for washing, whereby no employe need be compelled to leave the factory in an untidy condition. I believe there could be no more profitable expenditure of money or consideration given the employee that will be more fully appreciated than that which will inure to his personal comfort. Many of the factories recently built are all that can be desired for the comfort of those employed in the way of having dining-rooms, wash-rooms and good lavatories. A number of firms have provided dining-rooms with suitable reading material for the benefit of their employees. There is scarcely a factory of any magnitude but has a large number of the employees, through necessity, carrying their noonday meal there and partaking of it within the building, and I think it is most essential that every factory should have a suitable dining-room provided where the employees could find a place to deposit their food, and when the dinner hour arrives would find a convenient and comfortable place to partake of it.

Some of the factories I visited have their walls and ceilings limewashed, and the floors of workrooms, passages and stairways scrubbed at regular intervals.

Ventilation.

I believe this is one of the most important matters which comes under the jurisdiction of the Inspectors, and that it should receive our earnest attention. To work all day in foul, stifling and overcrowded rooms is a menace to the health, and it is the duty of employers to provide every means available to obtain pure air in their workrooms.

Oxygen is as essential to life as food, and if men and women are crowded into a small space, it is little wonder that they have failing health. There is nothing more injurious to human life than breathing the exhalations of human lungs. The lack of proper ventilation is the most insidious foe, the most dangerous element of factory life. Mere lack of air is bad enough, but when the atmosphere of a workroom is filled with disease, I think you will agree with me in declaring that these dangers are truly alarming and call for serious consideration. Can you imagine any one who does not consider it necessary to keep clean and pure and sweet with soap and water and every contrivance that the twentieth century can afford us in the cause of cleanliness? Just as little, then, should you be able to imagine any one who would be willing to breathe dirty polluted air, and that is the only sort of air an unventilated room can afford. We can live without food for thirty days, and without water for seven days, but we cannot live without air for five

minutes, so you can realize how important it is that our air supply should be of the very best quality. Fresh air is the greatest medicine God ever gave to us—and the cheapest. Perhaps, that is why we use so little of it. It is becoming recognized as a cure for consumption, the great white plague, which has devastated so many of our Canadian homes. It will, therefore, be seen that it is most essential that those who are shut up in a factory should not be allowed to sit day after day in a close, stuffy, unventilated atmosphere. A great many stores, cigar factories, cap factories and clothing factories are badly ventilated, and some means of artificial ventilation should be provided where the windows cannot be opened. A great many employers think as long as the place is cool it is sufficiently ventilated, and they do not provide enough heat to allow the windows to be opened. In many places I found the windows closed and pasted up to keep out the cold, so that no ventilation could be obtained only through the opening of the door. I recommended to have the windows opened in the morning before the arrival of the employees, or at noon when the employees were at lunch. Well ventilated rooms are more quickly heated than those where the air is impure and foul. We find many erroneous ideas, and meet with strange excuses when we insist upon the law in this respect being observed. Not that there are no exceptions, for considerable progress has been made in the construction of new factories, many of which are up to date in every respect. Other establishments have been greatly improved, and the employers have gladly made the alterations that were necessary or were suggested to them.

Sanitation.

There has been a considerable improvement during the year in the sanitary condition of factories and workshops. Several establishments have put in new closets, liberally flushed and well ventilated. Others, by attention to cleanliness and repair, have raised the standard of propriety and comfort. Good surroundings and good sanitation are conducive to good health, as a short number of hours are an incentive to close application. It is sometimes difficult to keep lavatories in a clean condition. Unfortunately, many employees give a great deal of trouble by their abuse of such conveniences. It is discouraging to the employer after he has expended a sum of money to provide accommodation for those employed to find that his efforts in this respect have not been appreciated.

In some towns, I found very poor accommodation provided, and no separate approaches for male and female employees. In one town that I visited this summer I found a whole block without any sanitary conveniences provided, and there was considerable typhoid in the town owing to improper drainage. I think employers should be compelled to connect their drains with the sewers where such are provided, as in most towns this is sadly neglected.

Heating.

Generally speaking, the factories and workshops are comfortably heated. A few are neither heated nor ventilated. Women and girls sitting at their work all day require more heat than if they were walking around. Excessive heat or cold is a positive hindrance to good work. No heating of a room can be said to be made complete unless provision has been made for supplying it with pure air. I have recommended, where employees are sitting all day, to have the temperature at not less than 65 degrees. In one large establishment we have had considerable trouble owing to the shipping being

done in the lower part of the building and the doors kept open while girls were employed in the gallery above with no enclosure. Some days the place was so cold that the girls told me they had to quit work and go home. I recommended that this gallery where the girls were employed be enclosed so as to prevent cold and drafts. On my last visit the firm had given the contract to have this place fixed and comfortably heated.

Overtime Permits.

During this year there have been a great many applications for overtime permits, and about one-third more than usual were issued. These permits are required only where females are employed. I frequently find employers working their help after 6.30 p.m. without an overtime permit, and in such cases I insist that they apply in writing to our office, stating their reasons for requiring to work overtime. Where a sufficient reason was given we granted the permission. Some employers asked to be allowed to work their females until 10 p.m. This we refused. The regulations are that during the exemption no female help shall be employed before the hour of six in the morning nor after the hour of nine in the evening. Some of the employees are often slow to complain about being worked later than the time prescribed by the Act, as they usually receive an extra rate of wages, which they think to a certain extent compensates. I sincerely believe that overtime permits should be prohibited, as I consider the hours of labor are quite long enough.

Hours of Labor.

The tendency of the times is towards a shorter total of hours during the week's work. The Saturday half holiday is becoming quite popular among employers as well as those employed. In towns, a number of the stores give their help a half holiday during the hot weather, usually Wednesday or Thursday afternoon. The employers told me they found it very beneficial to themselves as well as to the employees. We have received petitions from employees to allow them permission to use part of their time allowed for the noon-day meal in order to have a half holiday on Saturday; but, under section 9 of the Act, an Inspector has no power to grant such permission. I think one hour is little enough to partake of the principal meal of the day, and anything less could not fail to be ultimately injurious to those employees who hurriedly eat their meal and then rush back to work. I have had some trouble with the employers working their help longer than the law permits, and in such cases I notified them regarding the hours prescribed by the Act.

Canning Factories.

I have visited all the canning factories in my district, and on the whole I found them in a fairly good condition, but there is room for improvement in some instances. It is very difficult to keep these industries in a proper condition. The greatest evils in the eastern district are the disposal of the refuse and the lack of proper drainage. Some factories have the refuse carted away, but there are others who allow it to accumulate until decomposed, thereby affecting the health of the public as well as that of the employees. In one factory the conditions were most unsanitary owing to an insufficient supply of water and proper drainage, and this case I reported to the Local Health Officer. The owner of the factory agreed not to commence operations again until the conditions were remedied. In another factory I found the interior conditions satisfactory, but the drainage defective, being

dependent on a creek which was dried up, leaving the refuse exposed in the bed of the creek. This caused an offensive odor. I also reported this to the Health Officer, who stated that the matter would be attended to the coming year. As the factories were about to close, he did not consider it advisable to do anything at present. The Old Homestead Canning Factory, at Picton, is up to date in every respect, being a new building valued at $100,000. In some of the canning factories cleanliness is well observed. There is another large factory just completed within the last year, the interior of which is modern, but the outside surroundings are unsanitary owing to the refuse being allowed to accumulate. I observed in many places a lack of towels and washing facilities, and found the outside closets unsanitary. Many of these factories are also defective as regards cleanliness, ventilation, and a good method of extracting the steam. The canning industry has made such remarkable expansion during the past few years that it is little wonder we find the condition of the surroundings, sanitation, etc., wanting in some respects.

As in the past, many children and women are employed during long hours. As the season is short and the fruit perishable, the employers avail themselves of the privilege to work the employees into the late evening hours. The Factories Act does not provide a limit to the hours worked in this industry.

Evaporators.

I visited the evaporators in the eastern district and found many insufficiently provided with the requirements, and there appeared to be little attempt at cleanliness. In one place neither wash basins nor towels were provided. The floor was unclean, the basement being used as a storage for evaporated apples. The manager claimed that the floor could not be scrubbed owing to the water leaking through. I suggested that the floor be scraped, as in some places it appeared to be an inch thick with the refuse from apples being trodden upon. As in the canning factories, the decayed apples and refuse are left in the yard until the end of the season. With such surroundings, these premises cannot appear otherwise than unsanitary. I made a number of suggestions and hope next year to find a marked improvement.

Laundries.

In the laundries I find a great improvement in the buildings and sanitation. In one laundry, in Ottawa, the owner has spared no expense in making it up to date. While inspecting this laundry I remarked to the employer, "How well the employees looked." He replied that it was the ventilation and pure air that made the change. The safeguarding of roll feed machinery in many of these industries is to a certain extent responsible for accidents. In a Kingston laundry a young girl got caught in the collar and cuff machine owing, it is claimed, to the machine not being properly guarded. In Cornwall an accident happened to a young boy being caught in the mangle in use in a laundry. I think it would be well if the manufacturers of machines would provide safeguards before placing them on the market. In speaking to some employers, I found many ignorant of the law regarding protection for machinery, and others were at a loss to know where to obtain the proper guards. I am frequently told that such protection as is required by the Inspector should be provided by the man who made the machine. In most laundries I find the owners willing to live up to, if not to exceed, the requirements of the law.

Child Labor.

During this year I found a great many children employed in mica factories. On investigation I learned that no efforts had been made to ascertain the correct age of the children employed. The children's statement that they were fourteen years of age was considered sufficient to warrant their being employed. In cases where the appearance of the children indicated that they were not fourteen years of age, I had them sent home to obtain certificates from their parents or guardians, and not being satisfied as to the validity of the source of the certificates, I required either a certificate of registraion or a baptismal certificate from the clergyman. On my last inspection of these mica factories I observed a great improvement. In nearly all cases proper certificates had been obtained. In the General Electric Company, in Ottawa and Carleton Place, I have never found any children under age. In both these factories the employers endeavor to carry out the provisions of the Act.

In one factory the manager stated that owing to their being unable to obtain sufficient help they would be compelled to send the work to the homes of the employees. If such a measure were adopted, it would result in setting the Act at defiance. Another manager told me, as they were not allowed to employ children in Ontario, they had started a branch in Hull where they were not so strict in regard to employing children.

On several occasions I have had unpleasant and touching experiences respecting the dismissal of children under age, in cases where the widowed mother requests the privilege to allow her child to work in some factory or workshop where the manufacturer, through sympathy, offers employment. It is well that our Factories Act does not give the Inspector any discretion in such cases, because the Inspector is human, and if we had the authority I apprehend our hearts would be touched by the appeals of those poor and unfortunate ones. But an Inspector has no power, under any circumstances, to grant permission to a child under fourteen years of age to work in a factory. In such cases, I generally advise the mother to try and send their children to school until the age limit is reached and then they can go to work. Our law is very beneficial to the child, physically and mentally, giving opportunity for its education and normal growth, thus fitting it, to some extent, for the burdens of labor which must be borne in its inevitable battles of maturer life.

The Inspectors are constantly endeavoring to safeguard the working classes. Fire-escapes, ventilation, sanitary conditions, etc., have all received our attention, but, above all things that appeal to our sense of right and justice, are safeguards which should be placed around the young. And what safeguard is greater than the influence of home—of a mother's care and influence over her children?

There never was an age when child labor could be so well spared as now. Improved machinery has given every adult worker more than double his productive capacity; so that the increased demands of growing commerce and manufactures are kept pace with by this increased power. When there is apparent necessity for child earnings in a family, to prevent the child from working when the opportunity offers seems like a sentimental and mistaken tenderness for the child and a wrong to the parents upon whom he is dependent. There are cases of exceptionally strong and vigorous children, and of exceptionally severe poverty and need, where the law works hardship. But for one such case there are thousands where it works welfare; and as the law raises the minimum employment age above actual childhood,

it helps to create a better industrial condition and more intelligent and healthier men and women to grow up engaged in manual work.

For a child to enter as a competitor into the world of labor means a strain of long hours and severe restraint destructive alike to body and mind. It is a humane measure that the law interposes its authority in forbidding children under fourteen years of age to work in factories, and at a period of life which ought to be devoted to their physical and intellectual development. I believe that before allowing a child of fourteen years to work in a factory the child should be examined by a physician, as I often find some children of twelve years of age are more fit to work than others at fourteen or sixteen years.

The following is a form of unofficial birth certificate, prepared by our Mr. Keilty, which has been found very useful in ascertaining the correct age of young persons applying for work in factories:

UNOFFICIAL BIRTH CERTIFICATE.

Ontario Factories Act.

Subsection (5) of section 2. Child shall mean a person under the age of fourteen years.

Section 3. No child shall be employed in any factory except in canning or dessicating fruit. Contravention of this section incurs a penalty of $50, or three months' imprisonment.

Section 38. The parent of any child employed contrary to this Act shall be liable to a penalty of $50, or imprisonment for three months.

Section 37. Every person who wilfully makes or signs a false declaration, under this Act, is liable to a fine of $100, or imprisonment for six months.

Place.....Date.....

This certifies that I am the parent or guardian of.....and that he was born at.....in the Province of.....on the.....day of.....in the year.....and is now.....years, and..... months of age.

(Signature) Parent or Guardian

.....

The above named.....is registered in the Town or Church..... records of.....as born on the.....day of.....in the year.....

(Signature) Registrar or Clergyman.

Dated.....19.....

.....

In the case of a child being born out of the Province, the above parent or guardian's declaration may be made before a Magistrate, Justice of the Peace or Notary Public.

I may say that the work increases yearly, new factories come into existence and others are undergoing changes and improvements. We seldom call that we do not find something to be remedied.

I have the honor to be,

Yours respectfully,

ANNIE BROWN.
Factories Inspector.

ACCIDENTS REPORTED

IN

1906

Table showing average wages per week and hours of labor, with comparison between those organized and unorganized, in localities as reported; also, wage payment periods.

Location and Title of Organization.	Average Wages per week.		Hours of labor first five days.		Hours on Saturday.		Total Hours per week.		Average Number of days idle.	Period of Wage Payments.		
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		Weekly.	Bi-weekly.	Monthly.
	$ c.	$ c.										
ALGOMA MILLS:												
Maintenance of Ways, No. 491	8 70	.....	50	.....	10	.....	60	.....	.....	.....	.....	monthly
BROCKVILLE:												
Order of Railway Conductors, No. 36	75 per	mo'th	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Tailors' Union of America, No. 262	8 00	7 20	50	50	10	10	60	60	60	weekly	.....	.....
United Brotherhood of Carpenters and Joiners of America, No. 799	13 50	10 50	50	50	10	10	60	60	60	"	.....	.....
Bricklayers,' Masons' and Plasterers' Union, No. 13	18 00	13 50	45	.....	9	.....	54	.....	.....	"	.....	.....
BRANTFORD:												
International Association of Machinists, No. 564	13 50	.....	50	.....	9	.....	59	.....	10	weekly	.....	.....
Bricklayers' and Masons' Union, No. 9	12 00	.....	45	50	5	10	50	60	70	"	.....	.....
International Barbers' Union, No. 298	10 00	.....	50	.....	14	.....	64	.....	.....	"	.....	.....
International Brotherhood of Painters and Decorators of America, No. 93	11 50	3 40	45	.....	9	.....	54	.....	.....	"	.....	.....
Plasterers' International Association, No. 64	11 00	8 30	45	.....	9	.....	54	.....	100	"	.....	.....
Brantford Typographical Union, No. 378	12 00	.....	40	.....	8	.....	48	.....	.....	"	.....	.....
BERLIN:												
Amalgamated Woodworkers' International Union of America, No. 275	10 00	9 40	50	.....	5 from to	June Sept.	.....	.....	60	.....	.....	.....
Federal Labor Union, No. 17	9 60	.....	50	.....	9	.....	59	.....	121	weekly	fortnightly	.....
United Brotherhood of Carpenters and Joiners of America, No. 553	12 25	10 75	50	.....	9	.....	59	.....	60	.....	fortnightly	.....
Bricklayers', Masons' and Plasterers' Union of America, No. 12	21 60	.....	45	.....	9	.....	54	.....	.....	weekly	.....	.....
COLLINGWOOD:												
United Brotherhood of Carpenters and Joiners of America, No. 1588	.....	.....	50	.....	10	.....	60	.....	60	weekly	.....	.....
Bricklayers', Masons' and Plasterers' International Union, No. 19	21 60	18 00	45	50	9	10	54	60	240	.....	fortnightly	.....

Journeymen Barbers' International Union, No. 528	10 00	.....	50	.....	14	.....	64	.....	9	weekly	.....	.....
CHAPLEAU:												
International Brotherhood of Locomotive Engineers, No. 319	30 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
CHATHAM:												
Bricklayers' and Masons' Union, No. 18	16 00	.....	45	50	9	10	54	60	6 mos.	weekly	.....	.....
CARLETON PLACE:												
Brotherhood of Railway Carmen of America, No. 229.	11 00	.....	50	.....	5	.....	55	.....	22	.....	.....	monthly
Stovemounters' and Steel Range Workers' International Union, No. 78	14 00	.....	50	.....	10	.....	60	.....	30	.....	.....	monthly
Ironmoulders' Union, No. 362	20 00	.....	50	.....	10	.....	60	.....	.....	weekly	.....	.....
DUNDAS:												
Ironmoulders' Union of N. A., No. 269	14 00	.....	50	.....	5	.....	55	.....	.....	.....	fortnightly	.....
FORT FRANCIS:												
International Order Maintenance of Ways Employees, No. 13	1 50 to 2 50	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
GALT:												
International Journeymen Barbers' Union of America, No. 413	10 00	.....	60	.....	15	.....	75	.....	.....	weekly	.....	.....
United Brotherhood of Carpenters, No. 1216	13 50	12 00	50	.....	5	.....	50	.....	.....	"	.....	.....
GUELPH:												
Brussels Carpet Weavers' Union, No. 277	8 00	.....	50	.....	5	.....	55	.....	.....	.....	fortnightly	.....
Piano, Organ, and Musical Instrument Workers' Union, No. 34	12 00	.....	50	.....	5	.....	55	.....	75	weekly	.....	.....
HAMILTON:												
International Broom and Whisk Workers' Union, No. 9.	13 50	.....	50	.....	5	.....	55	.....	15	weekly	.....	.....
Boot and Shoe Workers' Union, No. 228	.....	.....	50	.....	5	.....	55	.....	30	"	.....	.....
Hamilton Typographical Union, No. 129	14 00	.....	43¾	.....	4¼	.....	48	.....	.....	"	.....	.....
Journeymen Barbers' International Union of America, No. 131	11 50	.....	52½	.....	14½	.....	67	.....	.....	"	.....	.....
International Tobacco Workers' Union, No. 48	10 00	10 00	50	50	5	5	55	55	36	weekly	.....	.....
Int'n'l Bro'hood Carpenters & Joiners of America No. 18	14 00	Less	45	.....	5	.....	50	.....	30 or 40	weekly	fortni'htly	.....
Bricklayers' and Stonemasons' Union, No. 1	.....	.....	54	.....	5	.....	59	.....	.....	.....	fortni'htly	.....
Ironmoulders' Union, No. 26	15 90	13 90	50	.....	9	.....	59	.....	30	weekly	fortni'htly	monthly
Painters', Paperhangers' and Decorators' Union, No. 205	15 00	10 50	40	40	5	5	45	45	40	weekly	.....	.....
United Garment Cutters' and Trimmers' Union No. 23.	11 75	.....	45	45	4½	.....	49½	49½	.....	.....	fortni'htly	.....
Printing Pressmen's and Assistants' Union, No. 176	14 85	.....	45	.....	4 5/6	.....	49 5/6	.....	.....	weekly	.....	.....
Women Stitchers' International Union, No. 234	4 00	.....	50	.....	5	.....	55	.....	10	weekly	.....	.....
Int'l Brotherhood of Bookbinders of America No. 114.	13 00	.....	50	.....	5	.....	55	.....	.....	weekly	.....	.....
Amalgamated Society of Carpenters and Joiners, No. 819	14 00	12 75	45	45	5	5	50	50	15	weekly	.....	.....
Cigarmakers' Union No. 55	10 00	.....	40	.....	5	.....	40	.....	35	weekly	.....	.....
HAVELOCK:												
Brotherhood Railway Trainmen, No. 293	16 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
INGLEWOOD:												
Maintenance of Wages Employes' Int'n'l Union, No. 230	8 40	7 80	50	.....	10	.....	.....	.....	.....	.....	.....	monthly

Table showing average wages per week, with hours of Labor, etc.—*Continued.*

Location and Title of Organizations.	Average Wages per week.		Hours of labor first five days.		Hours on Saturday.		Total Hours per week.		Average Number of Days Idle.	Period of Wage Payments.		
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		Weekly.	Bi-weekly	Monthly.
	$ c.	$ c.										
KINGSTON :	9.00 to											
Lake Seamen	11 00	9 50	.....	.....	.....	.....	.....	.....	90	.....	.....	monthly
		Some										
Carpenters' and Joiners' Union of America, No. 249	14 72	Same	45	.....	8	.....	53	.....	30	.....	fortni'htly	.....
Ironmoulders' Union	14 25	.....	50	.....	5	.....	55	.....	60		fortni'htly	
Painters, Paperhangers and Decorators of America, No. 114	9 00	9 00	45	45	9	9	54	54	90	weekly	.....	.....
Longshoremen's International Union, No. 229	9 00	7 50	50	50	9	9	59	59	.....	weekly	.....	.....
Stonecutters' Association of North America	18 00	.....	40	.....	8	.....	48	.....	70	.....	fortni'htly	.....
Amalgamated International Steel Metal Workers, No. 117	12 00	.....	45	.....	9	.....	54	.....	.....	weekly	.....	.....
Amalmagamated Society of Engineers, No. 575	13 50	.....	50	.....	5	.....	55	.....	.....	.....	fortni'htly	.....
KENORA :						100						
Order of Railway Conductors, No. 362	25 00	.....	mil'ge	basis	9	miles	.....	.....	.....	.....	.....	monthly
LONDON :												
Brotherhood Railroad Trainmen, No. 240	15 00	.....	60	.....	12	.....	72	.....	52	.....	.....	monthly
Locomotive Brotherhood Firemen, No. 468	15 00	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
Printing Pressmen and Assistants' Union, No. 173	12 00	.....	$45\frac{5}{6}$	.....	$4\frac{5}{6}$	.....	$50\frac{3}{4}$	.....	.....	weekly	....	.....
Metal Polishers', Brass Moulders' and Brass and Silver Workers' International, No. 32	16 00	8 00	50	.....	6	.....	56	.....	12	weekly	fortni'htly	.....
Garment Workers of America, No. 33	.....	.....	40	.....	4	.....	44	54	.....	weekly	.....	.....
Painters, Paperhangers and Decorators of America, No. 97	12 00	.....	40	.....	8	.....	48	.....	.....	weekly	.....	.....
Bricklayers' and Masons' International Union, No. 5	10 00	.....	40	.....	4	.....	44	50	95	weekly	.....	.....
Society of Engineers, No. 625	13 00	.....	50	.....	5	.....	55	.....	24	weekly	.....	.....
LINDSAY :												
Locomotive Engineers No. 174	25 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
NORTH BAY :												
Maintenance of Ways Employes' International, No. 244	.....	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
Order of Railway Conductors	30 00	.....	.....	.....	.....	.....	on mileage		.....	.....	.....	monthly
NIAGARA FALLS :												
United Brotherhood Carpenters and Joiners, No. 713	16 20	.....	45	.....	9	.....	54	.....	21	weekly	.....	.....
Railroad Brotherhood of Trainmen	20 00	.....	.....	.....	.....	.....	varies	.....	.....	.....	.....	monthly

OTTAWA:	$ c.	$ c.										
Stereotypers' and Electrotypers' Union, No. 50	15 to 16 00		364 days.	9 hrs. Frid'y	5		50			weekly		
Order of Railway Conductors, No. 29	25 00		Mil'ge		Mil'ge		Mil'ge					monthly
Stonecutters Association of N. A	18 92	18 92	40	40	4	4	44	44	116		fortnig'tly	
Bricklayers and Masons' Int'l Union of N. A., No. 14	22 50	21 50	45	45	5	5	50	50	60	weekly		
Printing Pressmen and Assistants' Union, No. 5	16 50	10 50	42½		5		47½			weekly	fortnig'tly	
OWEN SOUND:												
Bricklayers' and Masons' International Union, No. 11	21 60	21 45	45	45	9	9	54	54	90		fortnig'tly	
Journeymen Stonecutters Ass'n of N. A	19 00	19 00	40	40	8	8	48	48	100		fortnig'tly	
Ironmoulder's Union, No 314			50	50	10	10	60	60	5	weekly		
PRESTON:												
Ironmoulders' Union, No. 314			50	50	10	10	60	60	60	weekly		
PETERBOROUGH:												
Maintenance of Ways Employes, No. 246	7 80	6 30	50	50	10	10	60	60				monthly
Carpenters and Joiners Union, No. 672	13 50	13 16	45	45	9	9	54	54	90	weekly		
Typographical Union, No. 248	11 00	11 00	40	40	8	8	48	48		weekly		
Journeymen Barbers' Int'l Union of A. No. 402	11 00	11 00								weekly		
Patternmakers' League of N. A	15 60	13 50	50	50	5	5	55	55	6		fortnig'tly	
Maintenance of Ways Employes, No. 211	10 00	10 00	50	50	10	10	60	60				monthly
PORT ARTHUR:												
Brotherhood of Locomotive Firemen	20 00	20 00					70	70	15			monthly
Brotherhood of Locomotive Engineers	30 00						72		30			monthly
PALMERSTON:												
Carriage Builders' Int'l Union, No. 61	10 00		50		10		60		12	weekly		
PORT COLBORNE:												
Carpenters and Joiners of America, No. 1168	10 00		45	50	9	10	54	60	90	weekly		
SMITH'S FALLS:												
Brotherhood of Trainmen, No. 245	22 00		45		9		54					monthly
Ironmoulders' Union of N. A., No. 201	15 00		50		9		59		14		fortnig'tly	
Locomotive Engineers, No. 381	25 00		varies				varies		15			monthly
Brotherhood Locomotive Firemen	17 00						36 to 72					monthly
ST. CATHARINES:												
Brotherhood Carpenters and Joiners, No. 38	12 00		45		5				40	weekly		
Barbers' Union, No. 1	12 00		60		16		76			weekly		
Bricklayers', Masons' and Plasterers' Union, No. 4	12 00		45		5		50		100	weekly		
Painters', Decorators' and Paperhangers' Union of America, No. 407	12 00		45		5		50		30	weekly		
ST. THOMAS:												
Order of Railway Conductors, No. 13	25 00						7 days					monthly
Barbers' International Union of America, No. 222	11 00		60		14		74			weekly		
Cigarmakers' International Union of America	11 00		40		5 to 6½				14	weekly		
Brotherhood Locomotive Engineers, No. 132	25 00						7 days					monthly
Journeymen Tailors' Union of America, No. 141	10 to 12 00	8 00					60 to 72		60	weekly		

Table showing average wages per week, and hours of Labor, etc.—*Continued.*

Location and Title of Organizations.	Average Wages per week.		Hours of labor first five days.		Hours on Saturday.		Total Hours per week.		Average Number of Days Idle.	Period of Wage Payments.		
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		Weekly.	Fortni'tly.	Monthly.
	$ c.	$ c.										
SARNIA :												
Order of Railway Conductors, No. 189	20 00	.....	.....	.....	.....	.....	When called	ever	.....	.....	.....	monthly
Painters, Decorators and Paperhangers	1 3 00	.....	.....	.....	.....	.....	54	55	30	weekly	.....	.....
STRATFORD :	9 00 to											
International Journeymen Barbers' Union of America	10 00	.....	60	.....	14	.....	74	.....	.....	weekly	.....	.....
Brotherhood of Locomotive Engineers, No. 188	20 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
TORONTO :												
Brotherhood of Railway Trainmen	65 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
International Journeymen Horseshoers' Union, No. 49	13 50	12 00	50	.....	5	.....	.....	.....	.....	weekly	.....	.....
Longshoremen's Union, No. 646	15 00	.....	varies	.....	varies	.....	varies	.....	120	weekly	.....	.....
Glass Bottleblowers' Association of U.S. and Canada, No. 66	25 00	.....	42½	.....	7¾	.....	50¼	.....	90	.....	fortni'htly	.....
Bakers' and Confectionery Workers of America, No. 204	13 00	10 00	45to50	.....	10to12	.....	53to62	.....	.....	weekly	.....	.....
Brewery Workers' Union, No. 304	10 00	.....	50	.....	5	.....	55	.....	.....	weekly	.....	.....
Street Railway Employees' Union, No.	.....	.....	.....	.....	.....	.....	50to60	.....	.....	.....	fortni'htly	.....
Photo Engravers' Union, No. 35	20 00	.....	45	.....	4	.....	49	.....	.....	weekly	.....	.....
Railway Carmen of America, No. 17	9 00	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
Theatrical Stage Employees' Union, No. 83	9 00 to 18 00	6 00 to 15 00	.....	.....	.....	.....	36to60	.....	100	weekly	.....	.....
Stone Cutters' Association of N.A.	22 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
International Brotherhood of Bookbinders' Union, No. 28	14 50	10 00	47½	.....	4½	.....	52	.....	12	weekly	.....	.....
Builders' Laborers' Union	9 00	.....	40	.....	4	.....	44	.....	.....	.....	fortni'htly	.....
Tile Layers' and Helpers' Union	17 60	.....	40	.....	4	.....	44	.....	40	weekly	.....	.....
Painters' Decorators' and Paperhangers' Union, No. 3	13 20	.....	40	.....	4	.....	44	.....	90	.....	fortni'htly	.....
Carpenters' and Joiners', 1st Branch	13 00	.....	40	.....	4	.....	44	.....	.....	.....	fortni'htly	.....
Marine Engineers, No. 1	12 00	.....	50	.....	10	.....	60	.....	60	.....	.....	monthly
Typographical Union, No. 91	14 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Civic Employees (Teamsters)	12 00	.....	45	.....	5	.....	50	.....	.....	weekly	.....	.....
International Brotherhood of Teamsters, No. 457	10 80	8 80	50	.....	10	.....	60	.....	.....	weekly	.....	.....

	$ c.	$ c.										
TORONTO—*Continued:*												
Printing Pressmen's Union, No. 10	16 50	.....	49	.....	4	.....	53	.....	.....	weekly	.....	.....
Metal Polishers and Buffers, Platers and Brass Workers No. 21	15 00	10 00	50	.....	9	.....	59	.....	15	weekly	.....	.....
International Steam Engineers, No. 152	10 00 to 50 00	.....	40to88	.....	4 to 16	.....	44 to 105	.....	.....	weekly	fortni'htly	monthly
Maltsters' Union, No. 317	11 50	.....	50	.....	10	.....	60	.....	6 mos.	weekly	fortni'htly	monthly
Wallpaper Machine Printers and Color Mixers	.....	.....	52½	.....	5	.....	57½	.....	12	weekly	.....	.....
Piano, Organ and Instrument Workers of America, No. 41	15 00	.....	45	.....	5	.....	50	.....	10	.....	fortni'htly	.....
Order Railway Conductors, Division 344	15 00 to 20 00	.....	m'l'ge	.....	m'l'ge	.....	m'l'ge	.....	.....	.....	.....	monthly
International Cigarmakers' Union, No. 27	10 00	.....	40	.....	4	.....	44	.....	6	weekly	.....	.....
Upholsterers' International Union, No. 30	13 00	11 70	45	.....	4	.....	49	.....	20	weekly	.....	.....
Leatherworkers' Union, No. 5	11 00	.....	45	.....	5	.....	50	.....	14	.....	fortni'htly	.....
WINDSOR :												
Plumbers' Steam and Gasfitters' Union, No. 407	19 00	.....	54	.....	9	.....	54	.....	.....	weekly	.....	.....
Switchmen's Union, 184	19 00	.....	60	.....	12	.....	72	.....	.....	.....	.....	monthly
Brotherhood Locomotive Engineers, No. 390	18 00	.....	.....	.....	.....	.....	.....	.....	40	.....	.....	monthly
Brotherhood Railway Trainmen	18 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Bricklayers' and Masons' Union, No. 6	18 00	.....	.....	.....	.....	.....	54	.....	100	weekly	.....	.....
International Journeymen Barbers' Union, No. 451	12 00	.....	55	.....	15	.....	70	82	.....	weekly	.....	.....
WATERLOO :												
Operative Broommakers' Union, No. 7	11 00	.....	50	.....	5	.....	55	.....	.....	weekly	.....	.....
Laborers' (Civic Employees), No. 26	10 50 to 12 00	9 00	50	.....	9	.....	59	.....	90	.....	fortni'htly	.....
WOODSTOCK :					no							
Ironmoulders' Union of North America, No. 249	15 00	11 78	50	.....	work	.....	50	.....	100	weekly	.....	.....
Builders' Laborers.. :	12 15	.....	.....	.....	.....	.....	54	60	60to90	.....	fortni'htly	.....
Bricklayers' and Masons' Union, No. 22	18 00	.....	.....	.....	.....	.....	54	.....	120	.....	fortni'htly	.....
WALLACEBURG :												
Glass Bottleblowers' Association, No. 70	35 00	25 70	42½	.....	7¾	.....	50¼	.....	90	.....	fortni'htly	.....

LIST OF ACCIDENTS

No.	Date,	Employer.	Place.	Business.
179	April 26	The Ellis Furniture Co	Ingersoll	Furniture
180	" 20	The Guelph Spring and Axle Co.	Guelph	Axles, etc
181	" 5	The Frost & Wood Co	Smith's Falls	Implements
182	" 7	"	"	"
183	" 16	The Dominion Cotton Mills Co.	Kingston	Cotton mill
184	" 11	The Rathbun Co	Deseronto	Cedar mill
185	" 20	Canadian General Electric Co	Peterborough	Electric machines
186	" 11	The Wm. Hamilton Mfg. Co	"	Machinists
187	" 14	"	"	"
188	" 19	A. McDonald	"	Lumber
189	" 13	The Rathbun Co	Deseronto	Box factory
190	" 14	The James Smart Mfg. Co	Brockville	Hardware
191	" 24	The Canadian Portland Cement Co	Deseronto	Cement
192	" 20	The Rathbun Co	"	"
193	" 17	Wm. Hamilton Mfg. Co	Peterborough	Machinist
194	" 26	"	"	"
195	" 23	H. S. Foffey	Portland	Lumber
196	" 11	Stevens, Hepner & Co	Port Elgin	Brushes
197	" 12	The Brantford Carriage Co	Brantford	Carriages
198	" 2	International Harvester Co	Hamilton	Harvest Machines
199	" 2	" "	"	" "
200	" 23	The Norton M'f'g. Co	"	Tin Cans
201	" 24	" "	"	"
202	" 9	International Harvester Co	"	Harvest Machines
203	" 10	" "	"	" "
204	" 10	" "	"	" "
205	" 20	" "	"	" "
206	" 20	" "	"	" "
207	" 24	" "	"	" "
208	" 9	" "	"	" "
209	" 4	" "	"	" "
210	" 6	Collingwood Shipbuilding Co	Collingwood	Shipbuilders
211	" 6	" "	"	"
212	" 27	International Harvester Co	Hamilton	Harvest Machines
213	February 13	Collingwood Shipbuilding Co	Collingwood	Shipbuilders
214	April 18	Kemp M'f'g Co	Toronto	Metalware
215	May 5	The Rat Portage Lumber Co	Kenora	Lumber
216	" 19	Rainy River Lumber Co	Rainy River	"
217	" 25	Kemp M'f'g. Co	Toronto	Metalware
218	" 4	H. C. Thomas Bros., Limited	St. Thomas	Brooms, etc
219	" 2	Massey-Harris Co., Limited	Toronto	Implements
220	" 9	The Cook-Fitzgerald Co	London	Shoes
221	" 9	J. B. Armstrong M'f'g. Co	Guelph	Carriages
222	" 10	The Carling Brewing & Malting Co	London	Brewing
223	" 10	Hiram Walker & Sons	Walkerville	"
224	May 17	The T. H. Taylor Co., Ltd	Chatham	Woollen Mill
225	" 15	Massey Harris Co., Ltd	Toronto	Implements
226	" 18	D. S. Perrin & Co	London	Biscuits
227	" 31	The Globe Furniture Co., Ltd	Walkerville	Furniture
228	" 5	Kastner Lumber Co	Wiarton	Lumber
229	" 30	The Canada Foundry Co	Toronto	Foundry
230	" 2	The Seamen Kent Co., Ltd	Meaford	Flooring, etc
231	" 3	The M. Langmuir Mfg. Co	Toronto	Trunks, etc
232	" 3	"	"	"
233	" 3	The Norton Mfg. Co	Hamilton	Tin Cans
234	" 3	The Valley City Seating Co	Dundas	Seating

FOR 1906.—*Continued.*

Person Injured.	Age	Particulars.	No.
H. H. Ellis		Palm of left hand lacerated in grass picking machine.	179
Alex. Begg		Arm cut by a small piece of steel flying from flattener.	180
Roy Chalmers		Struck in the chest while working on a corundum wheel; one of the castings he was grinding slipped between wheel and frame, striking him in chest	181
Thos. Gibson		Three fingers badly cut while working on a saw.	182
Carrie Robinson		Tip of index finger on left hand lacerated, caught fingers in gear.	183
William Redmond	34	Ends taken off two fingers on shingle saw.	184
A. Turner	19	Third finger of left hand partly cut off, while operating punch press.	185
Thomas Dawson		Eye burned by hot metal which flew out of stopper of cupola.	186
C. Leskey		Hand cut by jamming it between a piece of plate and a punch.	187
Geo. Gremmaire		Two middle fingers of right hand taken off by coming in contact with knives of jointer machine.	188
Arthur Paul	19	Slight cut on fleshy part of thumb while trimming end of small block on cut off saw.	189
Jas. Nicholson	24	Emery flew in eye while grinding casting.	190
Thomas O'Connor	26	Toe of left foot bruised by a casting falling on foot.	191
John Tait	45	Lost little finger on right hand; while oiling shaft in slash table a plank hit his hand shoving it on saw	192
S. Bickell		Bones in nose broken and face cut with the die in an pneumatic riveter which was blown out of end of riveter.	193
Herbert Moore		Foot burned by molten metal, which he tipped from a hand ladle.	194
H. Conway		Hand mangled; caught between two cog gears in veneer machine.	195
Geo. McMurray		Needle run through his hand; a boy started machine too soon.	196
Geo. Morgan		Was struck in the abdomen by a board thrown back by a saw.	197
Herbert O'Neill	21	Third right finger burst and fourth right fingers badly crushed while riveting a casting.	198
Frank Lutshani	27	Fourth right toe burned by some hot iron.	199
Ray McDonald	14	Nail torn off third finger of right hand while operating rolls or bending cans; nail was caught by piece of tin.	200
Joseph Cousins	28	A gash in face and teeth loosened; while forcing a balance wheel around with an iron bar, was struck in face by end of bar.	201
Robert Williams	30	When moving dies, one of them fell on thumb, cutting it.	202
John Sull	23	Right thumb, second and third fingers cut; hand caught between cradle and annealing pot.	203
Philip Williams	22	Third left finger cut; while filling a mold, struck finger with shovel.	204
Richard Lord	24	Left thumb badly crushed; hand caught in dog.	205
Steve Szumlinki	24	Right foot burned by some hot iron.	206
Joseph Fabian	17	Left foot and ankle burned by some hot iron.	207
Walter Rapsey	25	First left finger cut while tightening a bolt.	208
Philip Reast	16	Right foot burned, by some hot iron.	209
A. McBride		While working underneath carrier in some way jarred the structure causing the carrier to fall on him.	210
J. J. Morgan		While working underneath carrier in some way jarred the structure causing the carrier to fall on him.	211
Walter Thomas	26	Left thumb cut; while grinding a casting, thumb touched emery wheel	212
Mr. Tracy		*Was caught and wound up line shafting, his body striking the beams and causing instant death.	213
Harry Veal	27	First and second fingers on left hand bruised, while punching ladle handles.	214
W. B. Drummond		*While attempting to adjust a belt on a moving pulley was caught in the shafting and killed.	215
Joe Bizeski		Eye injured; was struck in eye by a piece of wood flying back from edger.	216
John Jarlie	25	Thumb of right hand crushed by a press.	217
G. Bishop	15	Right leg broken while throwing off belt on steam broom machine.	218
W. Burnside		Right ankle dislocated by falling forward striking his leg.	219
Mr. Donovan		Slightly injured.	220
Linton Hood		Face of two middle fingers cut down to first joint; while operating a sanding disc, his fingers came in contact with disc	221
F. Kaiser		One arm broken, other arm sprained and nose badly fractured. For convenience, he opened the doors to elevator and a few minutes after walked out of these doors, falling a distance of 12 or 13 feet to the floor below.	222
Chas. Forton		*Was found dead in a partially emptied grain bin. He must have fallen off a ladder through dizziness.	223
Maud Shaw	23	Hand caught in carding machine and was badly lacerated.	224
John Zwolinski		When about to oil factory truck, fell on right foot, badly crushing it	225
Earl Hicks		Was caught between the platform of elevator and door bruising him around hips and abdomen.	226
K. W. Chowen		Lost part of first joint of second finger while running a jointer	227
James Miller		Fingers of right hand severed. He lost his bearings and fell in contact with saw.	228
Wm. Wallace		Left hand injured, while moving castings caught his hand.	229
W. J. McCullough		Right hand torn obliquely about 3 inches while boring on an upright machine and attempting to pull hand away.	230
Miss L. Brown	16	Small eyelet punched into end of finger.	231
N. Brodie	16	Squeezed finger in dyeing out machine	232
John Paton	16	Tip of thumb of left hand crushed and nail torn off; while operating press his foot touched the treadle.	233
W. H. Ball		Was struck in the body by a piece that flew back from rip saw which he was running.	234

* Fatal.

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
235	May 8	The Kinleith Paper Co.	St. Catharines	Paper, etc.
236	" 14	Imperial Cotton Co	Hamilton	Cotton
237	" 16	Dominion Belting Co., Ltd.	"	Belting
238	" 10	The Graham Nail Works	Toronto	Nails
239	" 10	Collingwood Shipbuilding Co.	Collingwood	Shipbuilders
240	" 9	The International Harvester Co.	Hamilton	Harvest machines
241	" 12	"	"	"
242	" 3	"	"	"
243	" 14	"	"	"
244	" 15	"	"	"
245	" 18	The Norton Mfg. Co.	"	Tin cans
246	" 12	The Canada Screw Co.	"	Screws, etc.
247	" 1	Clark-Demill Co	Hespeler	Woodworking machinery
248	" 17	Collingwood Shipbuilding Co.	Collingwood	Shipbuilders
249	" 21	The Norton Mfg Co.	Hamilton	Tin cans
250	" 21	"	"	"
251	" 17	International Harvester Co.	"	Harvest machines
252	May 19	International Harvester Co.	Hamilton	Harvest machines
253	" 14	" " "	"	" "
254	" 18	" " "	"	" "
255	" 21	" " "	"	" "
256	" 23	" " "	"	" "
257	" 22	" " "	"	" "
258	" 15	" " "	"	" "
259	" 18	" " "	"	" "
260	" 15	" " "	"	" "
261	" 26	The Lincoln Paper Mill Co., Ltd.	Merritton	Paper mills
262	" 21	Collingwood Shipbuilding Co.	Collingwood	Shipbuilders
263	" 26	Cameron & King	Arkell	Saw mill
264	" 28	The Telfer Manufacturing Co.	Toronto	Paper boxes
265	" 23	International Harvester Co.	Hamilton	Harvest machines
266	" 26	" " "	"	" "
267	" 19	" " "	"	" "
268	" 4	The Firstbrook Box Co.	Toronto	Packing boxes
269	" 7	Christie Brown & Co., Ltd.	Toronto	Biscuits
270	" 3	Canadian Portland Cement Co.	Deseronto	Cement
271	" 3	The Frost & Wood Co., Ltd.	Smith's Falls	Implements
272	" 10	Raven Lake Portland Cement Co.	Victoria road	Cement works
273	" 7	The Frost & Wood Co.	Smith's Falls	Implements
274	" 17	The James Smart M'f'g Co.	Brockville	Hardware
275	" 25	The Canadian Portland Cement Co.	Marlbank	Cement
276	" 5	Stewart Hartshorn Co.	Toronto	Spring shade rollers
277	" 6	Toronto Paper M'f'g Co.	Cornwall	Paper, &c.
278	" 19	Vigars-Sheir Lumber Co.	Port Arthur	Lumber
279	" 19	The James Smart M'f'g Co.	Brockville	Hardware
280	" 15	" " "	"	"
281	June 6	The Rathbun Co.	Deseronto	Cement works
282	" 14	" "	"	" "
283	" 27	John Dick, Limited	Toronto	Cotton bags
284	" 27	Jones, Jackson & Mason Co.	Eldorado	Saw mill
285	" 27	" " "	"	"
286	July 7	Don Valley Brick Works	Toronto	Brick works
287	June 30	Imperial Laundry Co.	Kingston	Laundry
288	" 12	The Metallic Roofing Co.	Toronto	Sheet metal etc
289	" 6	The Sun Portland Cement Co.	Owen Sound	Cement
290	" 7	Collingwood Shipbuilding Co.	Collingwood	Shipbuilders

FOR 1906.—*Continued.*

Person Injured.	Age	Particulars.	No.
R. Ripley		Cut on scalp about 1 inch square; was struck on head by a belt hook	235
F. Morris		Foot crushed by an elevator	236
Lily Young		While operating sewing machine had needle run through fleshy part of right hand	237
Thos. Mohan		Finger crushed in a fence staple machine.	238
John Allen		Leg broken while sitting on girder track of travelling crane; the crane operator, not seeing him, started the crane in motion, the wheel breaking his leg.	239
W. J. Greenless	42	Right leg grazed; binder balanced over and struck leg.	240
K. Monagian	36	Right large toe grazed by casting falling on it.	241
John Hotrum	49	Left arm cut near elbow; arm struck against saw.	242
Geo. H. Jones	29	Right foot bruised; slipped when getting bolster out from die.	243
Wm. Evans	15	Right arm and fingers burned by some iron from ladle.	244
William Miller	18	Index finger cut off about the root of the nail; hand caught between stamping dies.	245
Arthur Thomas	42	Index finger of left hand badly crushed while wiping the cam of a machine in operation.	246
Wallace Clark		Lost end of middle finger on jointer.	247
F. Robinson	35	Instep bruised while helping to move a piece of shafting.	248
Fred Ryerson	11	Deep gash in nose; a tin can was thrown at him striking him.	249
F. Tansley	20	Nail torn off middle finger of right hand; finger caught in dies of power press.	250
M. Muradian	30	Left thumb bruised; when chipping castings hammer slipped and struck thumb.	251
John Rose	22	First and second left fingers cut while facing on drill; hand caught in gear.	252
Samuel Taylor	32	Palm of right hand burned; iron splashed while carrying.	253
Cristo Phillips	22	Second left toe badly crushed; foot caught between pots and iron plate while knocking out pots.	254
John Oswald	25	Large left toe and left foot burned by some hot iron.	255
Toros Kedrian	30	Left hand burned by some hot iron.	256
Sidney Purse	24	Left thumb bruised by a hammer.	257
John Hadi	30	Right arm burned by some hot iron.	258
Eric Jennings	28	Right thigh cut by mitre knife.	259
William Evans	45	Right arm and finger burned and scalded by some hot iron.	260
William Horton	17	One toe broken and two others bruised; foot caught in hoist.	261
Benjamin May	33	Back slightly bruised; cable parted, causing gin pole to fall and an iron pin which was in the pole grazed his back.	262
W. H. King		*While sawing was struck on the left temple by a board from saw causing death in a few hours	263
Lizzie Lafontaine		First finger of left hand punched while operating corner staying machine	264
Asa Howson	22	Left thumb cut by a wrench.	265
John Miller	40	Second and third left finger burst; caught fingers against a pile of iron	266
Wm. Argent	19	Second right finger cut; door struck hand	267
H. Down	21	Top of right thumb taken off below first joint, and first finger gashed while operating on a rip saw.	268
Georgina McBrien	19	Leg broken and other injuries; fell fifteen feet while attempting to get on elevator.	269
Chas. Hanes	25	Nail penetrated foot.	270
John Leach		First finger of left hand broken; struck with a hammer.	271
Elias Liscumbe	30	*Killed instantly.	272
John McLean		Foot burned by some hot iron spilling on it.	273
W. Francom	50	Muscles in wrist and fingers of right hand strained; while working at a large mould rope fell and caught him.	274
Archie Darlington	19	Thumb, index, and middle finger cut on button saw.	275
Stewart Anderson	33	*Scalded to death while repairing boiler	276
Geo. Langdon	15	Left arm broken about elbow; got arm caught in a dryers of machine.	277
James Dumal		Hand was drawn to saw by shirt sleeve catching when he put hand between the live rollers. Amputation of left hand at wrist was necessary.	278
Richard Mitchell	35	Toes on left foot jammed, casting slipped off truck and struck foot.	279
Arthur Bates	15	Ankle badly sprained; was going up elevator with a box of castings when elevator fell to ground.	280
Thos. Stoner	23	Back of four toes cut with an axe.	281
Peter Stark	18	Left thumb jammed between board and roller.	282
Geo. Brown		Three fingers jammed while cleaning roller on picker machine.	283
Wesley Mason		Severely bruised and burned by boiler explosion	284
Mr. Jackson		Bruised and burned by boiler explosion.	285
John Vernon		While hauling clay on upper tracks in some way fell and slipped into one of the grinding machines. After being removed he seemed to be suffering from a fracture of the leg.	286
Eva Woolstein		While looking around out of a window put her hand on one of the mangles, and in trying to save it her other hand was caught, and both were badly crushed almost to the elbows	287
Albert Charlesworth	21	Four fingers of left hand crushed off; he tripped the press while his hand was between dies.	288
Alex. Holmes		Was caught in the lineshaft and had arm torn off and three ribs broken.	289
os. H. Ball	30	Leg bruised; was struck by a girder.	290

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* Fatal.

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
291	June 1	International Harvester Co	Hamilton	Harvest machines
292	" 4	" "	"	" "
293	" 4	" "	"	" "
294	" 11	The Parkin Elevator Co	"	Elevators
295	" 18	The Goldie & McCullough Co., Ltd	Galt	Iron Founders
296	" 8	International Harvester Co	Hamilton	Harvest machines
297	" 23	Massey-Harris Co	Brantford	Implements
298	" 30	Kinleith Paper Co., Ltd	St. Catharines	Writing paper, etc
299	" 26	Brantford Screw Co	Brantford	Screws, etc
300	" 29	Collingwood Ship Building Co	Collingwood	Shipbuilding
301	" 9	The Hamilton Steel & Iron Co	Hamilton	Steel and Iron
302	" 9	" "	"	"
303	" 20	Kinleith Paper Co., Ltd	St. Catharines	Writing paper
304	" 21	Geo. H. Hees, Son & Co	Toronto	Window shades
305	" 22	The R. McDougall Co	Galt	Iron Works
306	" 23	International Harvester Co	Hamilton	Harvester Machines
307	" 1	The H. Krug Furniture Co	Berlin	Furniture
308	" 13	The John Goodison Thresher Co	Sarnia	Threshers
309	" 22	Smart Bag Co	Toronto	Cotton Bags
310	" 25	D. S. Perrin Co., Limited	London	Biscuits
311	" 26	Massey-Harris Co., Limited	Toronto	Implements
312	" 26	" "	"	"
313	" 29	" "	"	"
314	" 29	" "	"	"
315	" 25	Berlin Felt Boot Co	Berlin	Footwear
316	" 2	The Acton Tanning Co., Limited	Acton	Tanners
317	" 19	Kemp M'f'g. Co	Toronto	Metalware
318	" 26	" "	"	"
319	" 27	" "	"	"
320	" 30	Jas. Playfair & Co	Midland	Lumber
321	" 27	" "	"	"
322	July 3	The Geo. McLagan Furniture Co	Stratford	Furniture
323	" 4	David Maxwell & Sons	St. Mary's	Implements
324	" 4	D. S. Perrin & Co., Limited	London	Biscuits
325	" 22	Canada Foundry Co., Limited	Toronto	Foundry
326	July 5	The Gutta Percha & Rubber Co	"	Rubber Goods
327	" 3	National Casket Co	"	Caskets
328	" 12	" "	"	"
329	" 12	Canada Foundry Co., Ltd	"	Foundry
330	" 19	Hay & Company	Woodstock	Woodwork
331	" 21	The Moffatt Stove Co., Ltd	Weston	Stoves
332	" 25	The National Casket Co	Toronto	Caskets
333	" 25	The Wm. Gray & Sons, Co., Ltd	Chatham	Carriages
334	" 23	J. S. Loughead & Son	Sarnia	Carriage Goods
335	April 4	The J. B. Armstrong Co., Ltd	Guelph	Carriage Goods
336	July 24	Canada Foundry Co	Toronto	Foundry
337	" 23	The John Morrow Machine Screw Co	Ingersoll	Screws, etc
338	April 27	John Dick, Limited	Seaforth	Cotton Bags, etc
339	May 19	" " "	"	"
340	July 5	Kemp M'f'g Co	Toronto	Metalware
341	" 9	Moulthrop Lumber Co	John's Island	Lumber
342	" 4	Eddy Bros. & Co., Limited	Blind River	"
343	" 18	" " "	" "	"
344	" 25	Kemp M'f'g Co	Toronto	Metalware
345	" 18	McCannis & McKelvie	New Liskeard	Lumber, etc

FOR 1906.—*Continued.*

Person Injured.	Age.	Particulars.	No.
Saul Kaplan	25	Right arm punctured, while drifting a casting, a piece flew and struck arm.	291
Steve Gasparovic	33	Right foot burned with some hot iron.	292
James Danley	28	Left arm cut on a set screw.	293
John Wright	....	Fell down elevator shaft at F. W. Bird & Sons' factory, bruising leg and back.	294
Arthur Runnacles	...	Arm crushed and broken; while putting dressing on a belt became caught, and left arm was carried around between pulley and belt.	295
Geo. Hollister	36	Right elbow cut and right side bruised; fell against a truck.	296
Ford Cook	21	End of finger crushed; caught between the saddle and tail stock of lathe.	297
John Laird	.....	Fingers of right hand pinched in the calenders.	298
Joseph Cheever	....	Second finger of left hand amputated at first joint while operating a bolt threader.	299
Geo. Riddle	60	Slight cut across two fingers on left hand by a plate falling on it.	300
Wm. Gee	.....	Leg broken; slipped while moving a pile from bench to scrap pile.	301
Alex. Watson	.....	Was overcome while putting tubes in boiler.	302
Jos. Morey	.....	A carboy of vitriol broke and poured over his feet.	303
Fred Sharpe	.....	While taking a load on the hand power elevator before pulling the elevator up, he undertook to oil the machinery, using a ladder slanted across shaft; the ladder slipped and he fell to the bottom, breaking three ribs and wounding scalp.	304
W. Majarison	.....	Foot burned; molten iron slopped out of ladle.	305
Wm. Simms	26	Left thumb taken off and first finger badly crushed; while trimming a plain bolt, press came down on hand.	306
L. Jonrard	.....	Head cut; cable broke and weight dropped on head.	307
J. F. Free	.....	Left foot and ankle burned by some molten iron.	308
S. Wilson	26	Fell from a waggon while transferring paper in rolls from warehouse to factory, breaking his wrist.	309
James Welford	.....	Received a scalp wound from putting his head out over the gate when elevator was coming down.	310
D. Morrison	.....	Hands jammed between a piece of wood coming through truck.	311
W. O'Reilly	.....	Sleeve caught on set screw, winding him up, lacerating right arm.	312
Mr. Corbett	.....	Burned about head and face by explosion of dust.	313
Mr. Prout	.....	Burned about head and face by explosion of dust.	314
Conrad Heiser	.....	Index finger of right hand crushed in die machine.	315
Abraham Stauffer	.. ..	*While taking leather out of drum another workman in mistake started the machine. Stauffer, being partly inside, was carried up to a beam, against which he was crushed and injured internally, and died about thirty minutes later.	316
Chas. Nickle	24	First and second fingers crushed by a press.	317
Albert Podger	19	Nail cut off third finger of right hand by stamping press.	318
Fred Burleigh	21	First and second fingers on right hand bruised by a press.	319
A. Urquhart	.....	Arm cut on an edger saw; had to be amputated below elbow.	320
Geo. English	.....	Arm cut in butting saw, tearing it.	321
Moses Gardner	30	One finger of left hand cut off at second joint, while running stock machine without guard.	322
Howard Fulcher	.....	While working at chamfering machine got left hand in one of the cylinders, causing amputation of thumb and forefinger of left hand.	323
James Murphy	.....	Caught finger in staying machine, taking nail off second finger on right hand.	324
T. Shorkey	.....	While moving beams from punch machine to fitters, a beam fell on his fingers, bruising them badly.	325
Thos. Sluce	.....	While working at one of the mixing mills, his right hand caught between rolls crushing it so badly that it had to be amputated between wrist and elbow.	326
A. Price	....	While running sticker machine, got his hand caught in the knives, causing a severe flesh wound on back of hand.	327
Wm. Scholes	.....	Index finger of right hand cut and second finger of same hand cut by a piece of wood turning in his hand and letting finger against saw.	328
Peter Steel	.....	While repairing travelling crane had hand on rail of trolley car track and was run over by car; four fingers were crushed and two taken off.	329
Wm. Collins	....	While operating a jointer had ends of two fingers severed.	330
Mr. Eagle	.....	Two fingers and thumb of left hand taken off in a press.	331
F. Baker	.....	While operating a shaper had end of thumb taken off at first joint.	332
Thos. Elliott	.....	Arm injured, caught in cogs when throwing off a belt.	333
James Powers	.....	Three fingers on right hand and thumb on left hand taken off in the shaft rounding machine; while smoothing a piece of board, the knives threw the board from under his hands.	334
Edward McDermott	.....	While operating a cut off saw hand came in contact, lacerating first finger.	335
Allan Laughlin	....	While pushing truck on service track crushed fingers.	336
Frank Weeks	.....	Head cut open and back hurt by falling from a ladder.	337
Harry Miller	.....	Was struck in eye by a bolt another man was using.	338
John W. Cooper	....	Caught elbow in revolving fan while oiling fan when in motion.	339
Geo. Moore	23	First finger of left hand cut while stamping with a press.	340
Alfred Ridar	...	Left hand severed at wrist by coming in contact with rotary trimmer saw.	341
Frank Deeks	.....	Bone of right leg broken just below the knee; a slab was caught when band mill carriage was reversed pinning injured man against saw bench.	342
Stephen Moorey	....	Ankle bruised and sprained by being struck with cant flipper arm.	343
John Grant	20	First finger on right and left hands cut by a double seaming machine.	344
A. Gauthni	.....	Received an abrasion on hand caused by butting saw.	345

* Fatal.

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
346	July 7	Don Valley Brick Works	Toronto	Brick works
347	" 7	W. B. Hamilton Shoe Co.	"	Boots and shoes
348	" 11	The Rathbun Co.	Deseronto	Cedar mill
349	" 13	Canadian Cordage Co.	Peterborough	Bindertwine
350	" 16	The Canadian Portland Cement Co.	Deseronto	Cement
351	" 14	The Rathbun Co.	"	Cedar mill
352	" 25	The Frost & Wood Co.	Smith's Falls	Implements
353	" 26	Canadian General Electric Co.	Peterborough	Electric works
354	" 26	The Rathbun Co.	Deseronto	Saw mill
355	" 26	The James Smart M'f'g Co.	Brockville	Hardware
356	" 30	Frost & Wood Co	Smith's Falls	Implements
357	" 30	P. W. Ellis & Co.	Toronto	Jewellers
358	" 14	Canadian General Electric Co.	Peterborough	Electric machines
359	" 3	Collingwood Shipbuilding Co.	Collingwood	Shipbuilding
360	" 3	" " "	"	"
361	" 2	J. S. Findlay	Owen Sound	Saw mill
362	" 12	The Norton M'f'g Co.	Hamilton	Tin cans
363	" 20	The Hamilton Steel & Iron Co.	"	Steel and iron
364	" 16	The C. Beck M'f'g Co., Ltd.	Penetanguishene	Lumber
365	" 16	The Norton M'f'g Co.	Hamilton	Tin cans
366	July 21	Collingwood Shipbuilding Co.	Collingwood	Shipbuilders
367	" 26	The Norton Mfg. Co.	Hamilton	Tin cans
368	" 27	The Hamilton Steel & Iron Co.	Hamilton	Steel and iron
369	" 30	The Whitman & Barnes Mfg. Co.	St. Catharines	Knife mfrs
370	" 14	International Harvester Co.	Hamilton	Harvest machines
371	" 21	" "	"	" "
372	" 21	" "	"	" "
373	" 9	" "	"	" "
374	" 6	" "	"	" "
375	" 28	Canadian Westinghouse Co.	"	Electric machines
376	August 3	L. Kuntz	Waterloo	Brewery
377	" 14	The London Foundry Co.	London	Foundry
378	" 4	Massey-Harris Co., Ltd.	Toronto	Implements
379	" 17	Chas. Mueller	Waterloo	Cooperage
380	" 15	The D. W. Thompson Co., Ltd	Toronto	Undertakers' supplies
381	" 22	The John Goodison Thresher Co	Sarnia	Threshing machines
382	" 23	D. S. Perrin & Co.	London	Confectionery
383	" 27	Thomas Bros., Ltd.	St. Thomas	Brooms, &c.
384	" 20	" " "	"	"
385	" 17	The Geo. White & Sons Co., Ltd.	London	Engines
386	" 21	Canada Foundry Co.	Toronto	Foundry
387	" 24	" "	"	"
388	" 23	The Acton Tanning Co. Ltd.	Acton	Tanners
389	" 10	Canadian General Electric Co.	Peterborough	Electric machinery
390	August 8	The James Smart M'f'g Co.	Brockville	Hardware
391	" 15	The Firstbrook Box Co.	Toronto	Packing boxes
392	" 20	Canadian General Electric Co.	Peterborough	Electric machines
393	" 20	" " "	"	" "
394	" 22	Joseph Simpson Sons	Toronto	Knitting factory
395	" 16	The Rathbun Co	Deseronto	Cement
396	" 27	Canadian General Electric Co.	Peterboro	Electric machines

FOR 1906.

Person Injured.	Age.	Particulars.	No.
John Wilson		*He went into one of the dryers to move the cars down the tunnels, and was seized with an attack of heart failure, and was found dead next morning.	346
Thos. Atkins		Lost end of left thumb; put thumb on top of die handle.	347
Anson Allore	30	Back of hand cut by dog on carriage.	348
M. Claney		Abdomen and arm badly crushed; was caught in coiling machine.	349
James Brown	30	Ankle bone broke by dredge bucket.	350
Sidney Hearns	33	While operating a circular saw cut left arm, requiring three stitches.	351
Steve Slintoe		While working in foundry, stumbled and fell into hot sand, burning hand severely.	352
E. J. Garvin	28	Finger lacerated and nail torn off; caught finger in die of punch press.	353
Thos Stoner	23	While working, a log rolled against him, spraining knee.	354
Thos. Casselman	25	While operating large press, three fingers on right hand were badly jammed.	355
Geo. Martin		While helping to hoist material with a windlass, crank slipped and struck him in the face.	356
William Lynn		While working on a drop hammer, in some way, the friction pulley was drawn to the shaft overhead and he lost his arm.	357
G. H. Buchanan	19	Cut cord under side of index finger of left hand, while lifting shaft out of lathe.	358
James Tait	35	Two fingers of right hand bruised while moving a piece of steel channel.	359
C. Chitty	29	Slight scalp wound; hit on head by end of sling chain.	360
F. Featherston		Received a serious cut; was thrown into rear side of log band saw.	361
Archie Wood	17	While trimming can covers got finger cut in rolls, making a deep gash on second finger of left hand.	362
T. Richardson	28	Knee bruised; tripped and fell against steel ingot.	363
J. McDonald		Forearm accidently cut while working in box factory.	364
Walter Catton		Thumb of left hand amputated at first joint; while starting up buffing machine, got thumb caught between chain and sprocket wheel on machine.	365
C. Meeke	22	Left ankle broken; fell from platform while drilling a new boat.	366
Henry Adams	22	First finger of right hand cut off at first joint; while cutting bottoms on a press, got his finger in between dies.	367
Wm. Freeborn	26	While shearing steel, thumb caught between shear and steel, taking off end of thumb.	368
Robert Loosemore		Small bone of left arm broken between wrist and elbow, while putting on the belt of grinding machine.	369
John Stevens	28	Right leg fractured; while tilting a truckboard of knotters, foot slipped and load fell back on leg.	370
Saul Kaplan	25	Second finger of left hand badly burst and leg bruised; while adjusting rest on emery wheel, wheel burst.	371
E. Eby	24	Hand punctured while working on a punch; the punch broke, and a piece struck hand.	372
Tony Rosi	23	Back of right hand bruised while working on a drop hammer	373
James Conway	27	Top of right hand crushed; pin in hammer broke and hammer fell on hand.	374
H. D Leate		While shovelling brass chips into a separator his arm come in contact with band saw, cutting elbow.	375
Jacob Klahs	25	*Scalded to death; did not turn the steam off at the proper time.	376
Jas. D. Robertson		While operating a jointer, left hand came in contact with the knives, severing two middle fingers and parts of the other two.	377
John Brodie		Left hand cut between the third and fourth fingers; hand caught in gear wheel of small engine lathe.	378
Alex. Preuse		While working on a buzz planer, his fingers were badly cut; amputation at last joint being necessary.	379
J. Struthers		First finger on right hand cut on rip saw.	380
Geo. Beasley		Index finger on left hand broken between first and second joint; caught in lathe.	381
Robert Short		Left hand caught in mixing machine and cut badly.	382
Nellie Martin	24	Three fingers of left hand crushed in printing press.	383
Chas. Berry	45	Little finger of right hand torn to the bone; a piece of board flew back from saw.	384
Albert Hallam		Was squeezed between traction engine and a boiler.	385
T. Lowe		While moving beams, one fell, bruising foot badly.	386
R. McLaughlin		While moving angles under crane, finger caught, almost taking it off.	387
R. Marchmant		While feeding leather into a splitting machine, put his finger too far into machine, cutting three fingers off left hand.	388
James Dodd	30	Top of head bruised, causing a slight concussion of the brain; while attaching ropes to casting struck head against crane hook.	389
Patrick O'Neil	40	Left eye burned; while catching at cupola sparks from molten metal flew in eye.	390
Thomas Ferguson	25	Thumb of right hand cut on rip saw.	391
John Wise	16	Palm of left hand cut; while scraping coils, knife slipped.	392
T. Desautel	60	Index finger of left hand amputated at second joint; caught in steam hammer.	393
Wm. Price	28	Neck badly hurt by elevator hoist.	394
R. Bedford	34	Finger nail taken off; hand slipped in seed roller.	395
H. French	21	Second finger of left hand bruised; while removing rest from lathe it fell	396

* Fatal.

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
397	August 28...	Canadian General Electric Co	Peterboro	Electric machines
398	" 21	" " " "	"	" "
399	" 28	" " " "	"	" "
400	" 28	The Frost & Wood Co..	Smith's Falls	Implements
401	" 28	" "	" "	"
402	" 1	The Paris Plow Co., Ltd	Paris	Plows
403	" 1	" "	"	"
404	" 4	The John Watson M'f'g Co	Ayr	Trucks, etc
405	" 4	The Hamilton Steel and Iron Co	Hamilton	Iron and steel
406	" 8	Monteith, Nixon, Ltd	Toronto	Windmills, etc
407	" 6	The Norton M'f'g Co	Hamilton	Tin cans
408	" 18	Dominion Belting Co	"	Belting
409	" 14	Collingwood Shipbuilding Co	Collingwood	Shipbuilding
410	" 3	" " "	"	"
411	" 18	The Norton M'f'g Co	Hamilton	Tin cans
412	" 15	The Hamilton Steel and Iron Co	"	Steel and iron
413	" 18	The Hespeler Furniture Co., Ltd	Hespeler	Furniture
414	" 4	Metallic Roofing Co., Ltd	Toronto	Building material
415	" 3	The MacGregor, Gourlay Co	Galt	Woodworking machinery
416	" 18	S. Knechtel Furniture Co	Southampton	Furniture
417	" 21	Kinleith Paper Co., Ltd	St. Catharines	Paper
418	" 21	" " " "	"	Paper, etc
419	" 22	Hamilton Steel and Iron Co	Hamilton	Steel and iron
420	" 29	The National Table Co	Owen Sound	Tables
421	" 25	Massey-Harris Co., Ltd	Brantford	Implements
422	" 29	Hamilton Steel and Iron Co., Ltd	Hamilton	Steel and iron
423	" 31	Dominion Belting Co., Ltd	"	Belting
424	" 20	Canadian Westinghouse Co	"	Electric Machines
425	" 30	The Norton M'f'g Co	"	Tin Cans
426	" 31	The Semmens & Evel Casket Co	"	Caskets, etc
427	" 31	Canadian Westinghouse Co	"	Electric Machinery
428	" 21	The Norton M'f'g Co	"	Tin Cans
429	" 11	Dominion Linen M'f'g Co	Bracebridge	Linen
430	" 18	Eddy Bros. & Co., Ltd	Blind River	Lumber
431	" 24	Kemp M'f'g Co	Toronto	Metalware
432	" 28	" " "	"	"
433	" 29	Georgian Bay Lumber Co	Waubaushene	Lumber
434	" 31	Kemp M'f'g Co	Toronto	Metalware
435	Sept. 12	M. Langmuir M'f'g Co	"	Trunks, &c
436	" 14	Massey-Harris Co	Brantford	Implements
437	" 26	D. S. Perrin & Co	London	Biscuits
438	" 26	The McLary M'f'g Co	"	Stoves, etc
439	" 7	Canada Cycle & Motor Co., Ltd	Toronto Junction	Motors, etc
440	" 26	Canada Foundry Co	Toronto	Foundry
441	" 20	The Howard Cooperage & Lumber Co	Ridgetown	Lumber, etc
442	" 19	Taylor-Forbes Co	Guelph	Hardware
443	" 27	Canada Cycle & Motor Co	Toronto Junction	Motors
444	" 26	" " "	"	"
445	" 29	The H. Krug Furniture Co	Berlin	Furniture
446	" 7	Kemp M'f'g Co	Toronto	Metalware
447	" 13	Muskoka Foundry Co	Bracebridge	Foundry

FOR 1906.—*Continued.*

Person Injured.	Age.	Particulars.	No.
Jas. Dodds	39	Third finger out of joint and hand scratched; while handling a casting it fell on hand.	397
Cecil Clitheroe	15	Left hand cut; while scraping bars, knife slipped.	398
Wm. Gray	40	Left thumb cut; while filing a casting, file slipped.	399
David Robb	....	Fingers cut on a planer in wood shop.	400
Wm. Burgess	.....	Was squeezed between an iron planer and a partition, bruising his legs and lower part of body.	401
Walter Kyle	.....	Eyes badly burnt; while carrying metal, handle broke.	402
Wm. Turner	.....	Foot badly burned, and also body; while carrying a ladle of metal, handle broke.	403
John Nearingsburg	.....	While working a small rip saw, hand came in contact with saw, cutting thumb and taking off first finger below first joint.	404
Aaron Memshin	.....	While engaged in removing a rail, got great toe of right foot severely cut and bruised.	405
Herbert Cockroft	.....	Hand injured while working on a buzz planer.	406
Lawrence Ryall	25	Stepped on a board with two nails protruding, injuring right foot.	407
A. L. Campbell	.....	Toe smashed by a roll of belting falling on it.	408
G. A. Stoddart	32	Cut under right eye; while punching a plate, bar slipped.	409
A. Buie	27	Right leg cut; he stepped on a plate, which tripped, and threw him down against the edge of another plate.	410
F. Wheeler	21	Index finger of left hand nearly severed; got finger caught in syrup can bumper machine.	411
Wm. Macklon	.....	While removing bars of iron from shears to scale, had his left eye severely cut.	412
F. C. Mosher	.....	While running buzz planer, had four fingers completely severed from left hand.	413
Fred. Rooney	19	Three fingers of left hand crushed off in the dies of a stamping press.	414
Wm. Gourlay	.....	Large casting fell on foot, bruising it.	415
August Breckow	56	In attempting to put a belt on pulley while the machinery was running, he was wound around the pulley and had his right arm broken in two places.	416
D. Strong	.....	Was struck on head and shoulder by elevator.	417
R. Alexander	.....	Finger crushed while loading hay on to truck.	418
Donald McGillivray	.....	While riding on the side of a box car passed an electric light pole, and was struck by the same and knocked off, causing a bad shaking up.	419
Geo. Dillabough	22	Third and fourth fingers of left hand taken off at the knuckles.	420
Harry Jones	50	While working a circular saw had four fingers of left hand cut.	421
Lina Angelo	.....	While helping to charge a furnace, slipped and fell, breaking his leg.	422
Andrew Jones	.....	First and second fingers of right hand mashed in a mangle.	423
E. Clauson	.....	While operating a screw machine, placed first finger of right hand into turret hole, severing it at first joint.	424
Henry Geiss	18	Nail torn off index finger of right hand; finger caught between dies.	425
Wm. Keith	.....	While working on shaper machine had end cut off third finger of right hand.	426
F. W. Cropper	.....	While hoisting the safety gate to lower the elevator, he lost his balance and fell about twelve feet down the shaft, causing a small scalp wound and slight concussion of the brain.	427
Percy Phillips	14	Hand cut on tin while feeding tops into chute.	428
Wm. Proctor	.....	Two first fingers of right hand crushed in the finishing calender.	429
Geo. Cousineau	15	Right foot caught in gear mill, necessitating amputation of fourth and fifth toes.	430
Milton McKerrow	15	First, second and third fingers of right hand crushed in a press.	431
Easy Ofner	22	First finger of left hand crushed while squeezing knobs in enamel teapot covers.	432
Leonard Labree	.....	*While leaning over shaft his clothes in some way caught and wound him up. He died three-quarters of an hour afterwards.	433
Wm. Anderson	20	First and second finger of right hand crushed in a press.	434
J. Black	.....	Two fingers bruised in corner machine.	435
S. Copech	40	Left arm broken near the wrist; while removing pieces from wood planer was struck in the arm by a piece.	436
Percy Sullivan	.....	Stepped into one of the elevator shafts, falling a distance of about one and a half stories. He sustained some bruises of his head.	437
Albert Wood	20	Left hand bruised; held his foot on trip while working.	438
J. Carruth	.....	Index finger of right hand badly crushed by a large lump of coal falling on it.	439
N. Kilner	.....	Skull fractured while hoisting trolley collectors, part of which, weighing about 20 pounds, became detached and fell on his head.	440
Jacob Ullman	16	*While his father was loading logs on a car, he was standing in front of the car; in some unknown way the stakes came loose letting three logs down on to the ground, which rolled on to him, killing him instantly.	441
Frank Yates	.....	Eye burnt by some hot iron splashing on it.	442
T. Stocks	.....	End of thumb on right hand crushed while operating a punch press.	443
Geo. Bartlett	.....	Two fingers slightly injured; one was cut to the bone, while removing work from a slotting machine.	444
Thomas Pettigrew	.....	Four fingers of right hand injured in buzz planer. The second finger had to be amputated at first joint and the other three fingers are badly lacerated.	445
James E. Hancock	24	Second finger of left hand crushed while setting tool in lathe.	446
L. McClure	.....	Lost two nails of fingers on right hand by a bar falling on hand.	447

* Fatal.

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
448	Sept. 14	Kemp M'f'g Co	Toronto	Metalware
449	" 19	Canada Saw Mill Co	Blind River	Lumber.
450	" 27	Kemp M'f'g Co	Toronto	Metalware
451	" 28	" " "	"	"
452	" 1	Canada Steel Goods Co	Hamilton	Hardware
453	" 11	The Norton M'f'g Co	"	Tin Cans
454	" 12	" "	"	" "
455	" 18	The Brantford Carriage Co	Brantford	Carriages
456	" 20	Imperial Cotton Co	Hamilton	Cotton mill
457	" 22	The Norton M'f'g Co	"	Tin Cans
458	" 28	Massey-Harris Co. Ltd	Brantford	Implements
459	" 26	Kinleith Paper Co., Ltd	St. Catharines	Paper, etc
460	" 15	International Harvester Co	Hamilton	Harvest Machines
461	" 29	Canadian Westinghouse Co	"	Electric Machines
462	" 1	Toronto Paper M'f'g Co	Cornwall	Envelopes, etc
463	" 3	The Canadian Colored Cotton Co	"	Cotton mills
464	" 6	The Firstbrook Box Co	Toronto	Packing boxes
465	August 30	Canadian Cordage & M'f'g Co	Peterborough	Binder Twine
466	Sept. 8	The Canadian Portland Cement Co	Marlbank	Cement
467	" 5	The Rathbun Co	Deseronto	Cement
468	" 8	The Consumers' Gas Co	Toronto	Gas
469	" 8	" " " "	"	"
470	" 8	" " " "	"	"
471	" 8	" " " "	"	"
472	" 8	" " " "	"	"
473	" 8	" " " "	"	"
474	" 8	" " " "	"	"
475	" 8	" " " "	"	"
476	" 8	" " " "	"	"
477	" 8	" " " "	"	"
478	" 8	" " " "	"	"
479	" 8	" " " "	"	"
480	" 8	" " " "	"	"
481	" 8	" " " "	"	"
482	" 14	The Bowmanville Foundry Co	Bowmanville	Foundry
483	" 17	The J. C. Scott Co., Ltd.	Toronto	Lumber
484	" 22	Canadian General Electric Co	Peterborough	Electric Works
485	" 22	The Canadian Colored Cotton Co	Cornwall	Cotton Mill
486	" 28	Wormworth & Co	Kingston	Pianos
487	" 12	W. C. Denniss	Bracebridge	Sash, Doors, &c
488	Oct. 10	The Kearney Timber & M'f'g Co	Kearney	Chairs, &c
489	" 23	Kemp M'f'g Co	Toronto	Metalware
490	" 25	" " "	"	"
491	" 2	Massey-Harris Co., Ltd.	Brantford	Implements
492	" 4	The Norton M'f'g Co	Hamilton	Tin Cans
493	" 9	Collingwood Shipbuilding Co	Collingwood	Shipbuilders
494	" 15	The Hamilton Steel and Iron Co	Hamilton	Steel and iron
495	" 12	The Canadian Colored Cotton Co	"	Cotton Mill
496	" 25	The Canada Screw Co	"	Screws
497	" 12	The Norton M'f'g Co	"	Tin cans
498	" 16	Collingwood Shipbuilding Co	Collingwood	Shipbuilders

FOR 1906.—*Continued.*

Person Injured.	Age	Particulars	No.
Vasil Tipe	39	Left eye burnt by some hot metal	448
Bert Christilaw	25	Struck in the back by a piece of trimming about six feet long	449
Donald Andrews	15	First joint of thumb on left hand cut off while cutting pan sections with a press.	450
William Pilson	20	Thumb on left hand crushed while punching screws.	451
Alfred Bailey	....	Lost part of forefinger on left hand.	452
John Sopervitch	21	Internally injured; strained himself by lifting boxes of tin plate.	453
Geo. Nowan	25	While unloading a car, got finger jammed between two pieces of tin, with the result that about a quarter of an inch was taken off middle finger of left hand	454
Edward Galbraith	....	Lost three fingers of left hand at middle joint on a jointer.	455
Amie McAnsh	....	Finger crushed while picking waste out of gearing.	456
Percy Phillips	11	Hand cut on tin while feeding tots into chute.	457
Walter Iggulden	21	Flesh wound on right arm between wrist and elbow by a bolt header falling on arm.	458
Joseph Robidas	....	Finger crushed in paper machine.	459
H. McKillop	18	Left forearm lacerated; was reaching over to put belt on pulley and caught arm in cog wheels.	460
Walter Deeley	....	While using a circular rip saw severed the first, second, and third fingers of left hand between the first and second joints.	461
A. Hartell	....	*While removing the top from a digester cooking pulp at a 30 lbs. pressure, contrary to orders, he sustained an injury and scald from which he died.	462
Thaddeus Feterly	10	Scalp wound, and scalded under his arm, by the bursting of a steam valve.	463
Richard Armstrong	18	Jagged cut over lower joint of thumb on right hand by a saw.	464
William Neale	....	Thumb of right hand badly crushed in a rope machine; had to be amputated.	465
Henaff Guillome	19	*Right leg severed and left leg badly crushed between thigh and knee. He was run over by motor, and died next day.	466
D. King	41	Cheek bone bruised; was hit by a piece of slab thrown by band saw.	467
James Wright	40	Severely burned by an explosion of coal gas purifier.	468
Wm. Cooper	....	Slightly burned by explosion of coal gas purifier.	469
Thos. Gardner	30	Severely burnt by explosion of coal gas.	470
Aaron Heard	35	Severely burnt by explosion of coal gas.	471
David Hardy	45	Severely burnt by explosion of coal gas.	472
Elliott Batt	37	Severely burnt by explosion of coal gas.	473
W. Webster	44	Slightly burnt by explosion of coal gas	474
Thos. Dickinson	....	Severely burnt by explosion of coal gas.	475
John Johnston	60	Severely burnt by explosion of coal gas.	476
Ed. Little	24	Severely burnt by explosion of coal gas.	477
R. Creagh	....	Severely burnt by explosion of coal gas.	478
P. Giatens	....	Severely burnt by explosion of coal gas.	479
W. Mills	23	Severely burnt by explosion of coal gas.	480
W. Dodds	31	Severely burnt by explosion of coal gas.	481
Andrew Leishman	....	Three fingers and part of the first finger taken off while using large press in cutting band iron.	482
H. Kelly	....	Finger cut on a buzz planer.	483
G. W. Allan	26	Second and third finger of left hand taken off at first joint; while passing buzz planer ran fingers against revolving knives.	484
Bart. Bonnardel	42	In filling oilers on shafting, he failed to place his ladder right, and fell fracturing bone in wrist	485
Gilbert Merritt	18	Fell down elevator shaft and was badly shaken up, but not seriously hurt.	486
Henry Reid	....	Face of left hand cut on rip saw.	487
Oscar Crocker	....	While assisting to place a belt, had his arm caught and dragged over a wheel, causing a fracture of the limb.	488
W. Hefferan	19	First finger of right hand cut off at first joint, while trimming teapot cover knobs with a press	489
Geo. Baker	23	Thumb of left hand bruised while punching oiler screws.	490
G. Demetrons	58	Index finger of right hand crushed while attempting to remove a small casting with his fingers from under a power shears while it was in motion.	491
William H. Pace	21	Caught finger between mould and chute of heading machine; severed at first joint.	492
Julius Barbas	35	Compound fracture of nose, skull and right leg fell from spar deck through boat to tank top, a distance of 30 feet.	493
Wm. Condon	....	Toe of right foot broken while making a filler for rudder of steamboat the tongs became loose and steam hammer broke them causing the tongs to fall on foot.	494
Hapostol Vano	17	Right hand so badly crushed while attempting to clean an opening machine while in motion, that the four fingers and one joint of thumb had to be amputated	495
Peter Carruthers	....	Forearm injured by the fall of a stock hammer while adjusting a machine	496
Joseph Cousins	31	Face cut above right eye, also causing a severe contusion of the cheek and jaw, while operating a body working machine	497
H. O'Neill	30	Lip split, nose fractured, and left hip bruised while building staging for a boat he walked along on staging looking upwards, and stepped over the edge falling a distance of 15 feet.	498

* Fatal

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
499	October 11	Collingwood Shipbuilding Co	Collingwood	Shipbuilding
500	" 29	The Valley City Seating Co	Dundas	Office fixtures
501	" 26	The Kinleith Paper Co., Ltd	St. Catharines	Paper, &c
502	" 24	The Norton M'f'g Co	Hamilton	Tin Cans
503	" 24	" " " "	"	" "
504	" 30	" " " "	"	" "
505	" 17	" " " "	"	" "
506	" 23	Dominion Radiator Co	Toronto	Radiators
507	" 25	John Fisher & Son, Ltd	Dundas	Paper and Twine
508	" 22	International Harvester Co	Hamilton	Harvest Machines
509	" 25	" " "	"	" "
510	" 5	D. S. Perrin & Co	London	Biscuits
511	" 2	Canada Cycle & Motor Co	Toronto Junction	Motors
512	" 12	J. B. Armstrong M'f'g Co	Guelph	Carriage Goods
513	" 5	" " " "	"	" "
514	" 12	Massey-Harris Co	Toronto	Implements
515	" 11	Canada Cycle & Motor Co	Toronto Junction	Motors
516	" 17	The Hanover Portland Cement Co	Hanover	Cement
517	" 30	Massey-Harris Co., Ltd	Toronto	Implements
518	" 24	Canada Foundry Co	Davenport	Foundry
519	" 24	" " "	"	"
520	" 30	The Williams, Greene & Rome Co,, Ltd.	Berlin	Shirts, &c
521	" 11	The Sherlock Manning Organ Co	London	Organs, &c
522	" 2	The Canadian Locomotive Co	Kingston	Locomotives
523	" 3	The Firstbrook Box Co	Toronto	Packing boxes
524	" 3	John Dick, Ltd	Cobourg	Cotton bags
525	" 3	The James Smart M'f'g Co	Brockville	Hardware
526	" 12	The Firstbrook Box Co., Ltd	Toronto	Packing boxes
527	" 11	Frank H. Fleer & Co	"	Chicklets
528	" 10	Deseronto Iron Co	Deseronto	Pig iron
529	" 8	Canadian General Electric Co	Peterboro	Electric works
530	" 11	" " " "	"	" "
531	" 20	Belleville Portland Cement Co	Belleville	Cement
532	" 20	" " " "	"	"
533	" 22	Canadian General Electric Co	Peterboro	Electric works
534	" 30	The Trent Valley Woollen Co	Campbellford	Woollen mill
535	" 24	Weston Shoe Co	"	Shoes, etc
536	August 1	W. Garrett & Son	Tweed	Foundry
537	October 21	The Standard Chemical Co	Deseronto	Chemical works
538	November 2	Canadian General Electric Co	Peterborough	Electric works
539	" 5	" " " "	"	" "
540	" 12	" " " "	"	" "
541	" 13	The Trent Valley Woollen Co	Campbellford	Woolen mill

FOR 1906.—*Continued.*

Person Injured.	Age.	Particulars.	No.
A. Houghton	32	Head, face, neck, hands, and legs scalded by bursting of blow-off pipe.	499
Geo. Ellam	15	Lost most of four fingers on left hand while running a rip saw.	500
F. J. Whyte	....	Two fingers of one hand crushed while cleaning the calender roller.	501
Alice Gray	16	Deep cut on inner side of little finger of left hand; caught finger on a can in rolls of double seaming machine.	502
J. H. Purdy	40	Three toes badly crushed; upset iron casting on foot.	503
Geo. Finch	17	Two middle fingers of left hand severed about first joint, got hand caught under die for varnish can tops.	504
Chas. Bloomer	20	Knuckle cut open, while beading gallon roll seam cans.	505
Thos. Arnott	60	While pouring hot iron into a mould, it exploded, throwing iron into face burning eye severely.	506
Frank Morden	....	Right arm burned came in contact with dryer cylinder.	507
W. Hunter	44	Right thumb amputated; when helping to move oven door, crane was moved up and drew thumb into block.	508
W. Parker	20	Second and first right finger badly crushed on trimmer punch press.	509
Annie Snelling	....	Piece taken off thumb of left hand in biscuit icing machine	510
J. Wixson	....	While working at a tank, the lid of which is held up by a rope balanced by a weight, the rope broke, and weight fell on right foot, breaking the bone in the third right toe, and two other toes were crushed.	511
J. Parr	....	Ankle injured by a pile of steel shoeing falling on his foot.	512
Wm. Arris	....	Hand cut between index and middle finger, while operating a variety saw.	513
Owen McEnaney	....	Slipped and fell against a rail, cutting himself.	514
Thomas Whetham	....	While working at a grinder, in some manner, the wheel broke, striking him on the right hand and badly lacerating two fingers and thumb.	515
G. Piker	68	While quarrying clay, another man was picking, and happened to strike him in calf of leg, inflicting quite a cut.	516
W. Martin	....	While carrying a ladle of iron, stumbled and fell, scattering contents and burning body severely.	517
S. Kutzman	....	While painting two large girders, they fell, crushing him badly about the head and body.	518
C. Sosarro	....	Girder fell on him crushing him badly about head and body.	519
Mr. Kersnofski	....	Right arm broken near wrist; while moving a case of goods, the truck slipped and caught his arm between the case and the wall.	520
N. Miles	16	Cut under the eye by a small piece of board from planer.	521
Robert Burke	....	* He was a machinist engaged in operating a large frame slotter. While watching his work, and while the machine was in motion, he put his head under the "plunger," and notwithdrawing it quickly enough, the plunger came down and crushed his skull.	522
George Findlay	22	His left hand was caught in buzz planer and cut off at the wrist.	523
James Dawes	....	While cleaning picker, fingers came in contact with teeth in cylinder, thereby breaking the small bone in third finger, and skin was torn off knuckles of first three fingers.	524
Addison Billings	40	Finger jammed; while wheeling castings something caught in wheelbarrow and threw him against revolving mill jamming little finger of left hand.	525
Henry Sloan	20	Second, third and fourth fingers of right hand badly mangled in gang saw.	526
Maud Gilbert	14	Arm broken in two places; clothes caught on slow running shaft, making seven revolutions a minute, and in putting hand out to pull clothing away, the arm got caught.	527
Wellington Hicks	35	* Fell down elevator shaft and sustained, besides the shock, a compound fracture of one leg, dislocation of one knee, and bruises on the head. He was sent home under the care of a physician, and died almost exactly forty-eight hours later from the effect of shock.	528
Geo. Noyes	26	Was slotting commutator bars, and sleeve caught on cutter while passing arm underneath machine instead of over left hand, receiving cut from wrist joint to first finger across back; bone in little finger cut in two, and tendon on second finger cut.	529
H. Killingbeck	19	While cutting off leads for carbons first finger of left hand was taken off	530
Geo. Rion	30	* Was instantly killed by accidental explosion of dynamite, while engaged in loading coal for a blast.	531
William Bowler	17	Slightly injured by accidental explosion of dynamite, while engaged in loading coal for a blast.	532
David Connell	26	While cutting sheet iron, fingers slipped into knives.	533
W. H. Wesley	45	Was throwing of the belt in the usual way, but without waiting for the machine to stop and put his right hand in, lacerating it badly all the way down.	534
Albert Phillips	....	Caught hand in splitting machine severely crushing two fingers	535
S. G. Way	31	Two outer hand bones broken by a blow from crane crank.	536
Albert Fields	....	Was accidentally scalded on face and chest while removing valve out of steam pipe.	537
Claire Clancy	17	Piece of sheet iron slipped while passing into shears.	538
Allen Robertson	14	Right foot badly bruised; caught between wheel and cable on elevator.	539
C. E. Cossey	23	While running steel shaving from lathe while in motion, cut first finger on right hand.	540
W. Baker	55	Right hand broken while repairing machine; thumb caught in the stop motion.	541

* Fatal

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
542	November 16.....	The Sylvester M'f'g Co.....	Lindsay.....	Machinery .....
543	October 21.....	The Standard Chemical Co.....	Deseronto.....	Chemical works.....
544	November 21.....	Canadian General Electric Co.....	Peterborough.....	Electric works.....
545	" 20.....	The Dominion Cotton Mills Co	Kingston.....	Cotton mill.....
546	" 27.....	The Quaker Oats Co.....	Peterboro.....	Oatmeal .....
547	" 27.....	Canadian Colored Cotton Mills Co.....	Stormont	Cotton mills .....
548	" 26.....	The Wm. Hamilton M'f'g Co	Peterboro.....	Machinists .....
549	" 1.....	D. S. Perrin & Co.....	London.....	Biscuits.....
550	" 2.....	Massey-Harris Co.....	Toronto.....	Implements.....
551	" 10.....	J. B. Armstrong M'f'g Co.....	Guelph.....	Carriage goods.....
552	" 10.....	The McLary M'f'g Co.....	London.....	Stoves, etc.....
553	" 14.....	The Williams, Greene & Rome Co., Ltd.	Berlin.....	Shirts, etc. .....
554	" 17.....	Massey-Harris Co.....	Toronto.....	Implements .....
555	" 17.....	Massey-Harris Co., Limited.....	"	" .....
556	" 20.....	D. S. Perrin & Co.....	London.....	Biscuits .....
557	" 20.....	" " "	"	" .....
558	" 20.....	" " "	"	" .....
559	" 20.....	" " "	"	" .....
560	" 17.....	Massey-Harris Co.....	Toronto.....	Implements.....
561	" 24.....	E. Leonard & Sons.....	London.....	Engines, etc.....
562	" 1.....	St. Lawrence Starch Co.....	Port Credit.....	Starch.....
563	" 5.....	The Riordan Paper Mills, Limited.....	Merritton.....	Paper mills.....
564	" 5.....	" " " " "	"	" .....
565	" 5.....	" " " " "	"	" .....
566	" 7.....	" " " " "	"	" .....
567	" 9.....	Brantford Screw Co.....	Brantford.....	Screws, etc.....
568	" 9.....	Kinleith Paper Co.....	St. Catharines....	Paper, etc.....
569	" 7.....	The Norton Mfg. Co.....	Hamilton.....	Tin Cans.....
570	" 5	Dominion Radiator Co.....	Toronto.....	Radiator.....
571	" 6.....	The McGregor-Gourlay Co	Galt.....	Machinery.....
572	" 11.....	The Riordon Paper Mills, Ltd.....	Merritton.....	Paper mills.....
573	" 2.....	The Telfer Mfg. Co.....	Toronto.....	Paper boxes.....
574	" 21.....	Imperial Cotton Co.....	Hamilton.....	Cotton etc.....
575	" 19.....	Canadian Westinghouse Co. Ltd.....	"	Machinery.....
576	" 19.....	Massey-Harris Co. Ltd.....	Brantford.....	Implements.....
577	" 23.....	The Hamilton Steel and Iron Co.....	Hamilton.....	Steel and Iron.....
578	" 19.....	The Paris Plow Co.....	Paris.....	Plows.....
579	" 24	International Harvester Co.....	Hamilton.....	Harvest machines .....
580	" 2	" "	"	" .....
581	" 3.....	" "	"	" .....
582	" 3	" "	"	" .....
583	" 8.....	" "	"	" .....
584	" 10.....	" "	"	" .....
585	" 15.....	" "	"	" .....
586	" 17.....	" "	"	" .....
587	" 30.....	Stauntons, Ltd.....	Toronto.....	Wall paper.....
588	" 27.....	Massey-Harris Co. Ltd.....	Brantford.....	Implements.....
589	" 7.....	Kemp Mfg. Co.....	Toronto.....	Metalware.....
590	" 5.....	The Parry Sound Lumber Co.....	Parry Sound.....	Lumber.....
591	" 20.....	Kemp Mfg Co.....	Toronto.....	Metalware.....

FOR 1906.—*Continued.*

Person Injured.	Age	Particulars	No.
Leslie Elliott		While rolling a grindstone it overbalanced and fell on his right foot, bruising toes.	542
Albert Fields		Was accidentally scalded on face and chest while in the act of removing valve out of steam pipe.	543
A. McDonald	14	Foot bruised, caught between door and car, while attempting to pass through when car was coming in.	544
George Brown		Toes of left foot jammed in elevator.	545
Henry F. McKeown	32	Left hand caught between grinding rolls and amputation was necessary	546
Ronald McDonald	29	Thumb and first two fingers injured in picking machine	547
T. O'Brien		Finger crushed; caught between handle of iron fuller and steam hammer.	548
Florence Sims		Second finger of left hand caught in candy rolls cutting off a piece of the flesh	549
Edward Gray		Left eye severely injured; while working machine saw, was struck by a small wooden block.	550
Frank Brohman		While operating a set of rolls for bending seat back panels, lost the third and fourth fingers of left hand.	551
A. Adair	45	He neglected to shift belt from tight to loose pulley before starting to change the die, and press started to run catching first finger of left hand.	552
Nelson Gross		Hand severely burned, while sand papering the armature of a motor	553
M. West		While pouring metal into a mould it exploded, burning his left eye	554
H. Wood		While pouring metal into a mould, it exploded, burning shoulder and head.	
Albert Abel		Went down with the elevator, receiving some injuries to his back	556
Joseph Orr		Went down with the elevator receiving a few cuts on his hands.	557
J. W. Meredith		Put hand in rollers, getting it bruised and skin torn off.	558
Jas. Peckham		In turning biscuit mixing machine, got thumb caught and cut	559
G. Boulain		First and second fingers cut, while passing a power saw table, tripped and came in contact with saw.	560
W. Oldridge		Two ribs broken and body bruised; while painting a sign, scaffold gave way and two pieces of plank struck him on the side.	561
John Elliott	28	*Got head caught underneath driving chain of revolving dryer, and died a few minutes after being released	562
Wm. Nesbitt		While passing sheet through rolls got ends of fingers slightly jammed.	563
Ralph Clark		Stepped off a blank outside of boiler house into a hole and broke small bone in left ankle	564
H. Hurson		While passing a sheet through rolls, got thumb on left hand caught, tearing off nail and punching same badly	565
Harry Dunn		Was standing on a pile of sulphite pulp with a bundle in his arms, when the pile tipped, and he fell on wrist, straining the tendons.	566
Thomas Miles		While working on a scaffold, he overbalanced and fell into an excavation, striking his head on some brick work, causing a very serious wound	567
Samuel Buckland		A quantity of pulp fell off a truck which he was loading and knocked him down.	568
Orland Murray	15	Tip of left thumb crushed while operating bumping press	569
Wm Gallagher	21	Left hand scalded by some hot water.	570
Del. Murray		Casting fell on his foot bruising it	571
Chas. Doyle		Ends of fingers punched between rolls, while pulling on the edge of a felt	572
Opfer Kuch		While engaged as a staving machine operator had first fingers of left hand caught in machine and end crushed out	573
Edward Burke		Finger cut and nail torn off while repairing band saw on bobbin winder	574
Herbert Wilson		Wrist badly cut while using a wood turning lathe	575
Fred Ware	19	Ends of third and fourth fingers on left hand crushed by getting in gear of an alligator shear	576
Arthur Theobald		Was burnt about face and arms from a flash from a bar, which was being rolled.	577
P. Wiggins		Part of first finger on left hand taken off on a buzz planer	578
Edward Casey	24	Back of right hand badly cut, hand struck against piece of steel	579
J. P. Corrigan	23	Second and third left fingers badly crushed, while using rough edge of die put his foot on trip.	580
Lester Singer	21	First, second and third finger cut by drop hammer	581
P. Woyinak	32	Forearms, hands face and head badly burned while putting coal into furnace.	582
A Peter	28	Second and third left fingers crushed while working at moulding machine	583
W. Precious	55	Back of left hand lacerated by a piece of iron cut off by a hammer	584
D Moriarity	20	First right finger cut; caught in spoke machine	585
H. Sheehan	23	Back of left forearm cut, caught in boring machine	586
Samuel Dempster		Left hand slightly bruised while running a machine	587
Harry Maw	20	End of second finger on left hand pinched off at the roots of the nail by letting a packing case fall on it.	588
Geo. Baker	23	Thumb of left hand taken off at first joint, while pinching other screws	589
John Johnson		*While engaged in placing belt upon the pulley which runs the slash table, by using too much force, the belt was forced over the pulley and he became entangled and was whirled around shaft and pulley. His arm was torn from his body and he was badly mangled. He died in one and one half hours after accident.	590
Leizor Pasho	26	Burnt back and shoulders while galvanizing iron sheets	591

* Fatal

LIST OF ACCIDENTS

No.	Date.	Employer.	Place.	Business.
592	December 13.....	Kemp M'f'g Co	Toronto.....	Metalware.....
593	" 14.....	" "	"	" .....
594	" 18.....	" "	"	" .....
595	" 20.....	" "	"	" .....
596	" 5.....	Smart Bag Co., Limited	"	Jute bags.....
597	" 4.....	Christie Brown & Co.....	"	Biscuits.....
598	" 5.....	The Rathbun Co.....	Descronto.....	Cedar mill.....
599	" 3.....	" " "	"	" .....
600	" 7.....	The James Smart Mfg Co.....	Brockville.....	Hardware.....
601	" 7.....	Canadian General Electric Co.....	Peterborough.....	Electric machines.....
602	" 7.....	" " "	"	" .....
603	" 11.....	The Gendron Mfg Co.....	Toronto.....	Vehicles.....
604	" 14.....	Toronto and Belleville Rolling Mills...	Belleville.....	Millers.....
605	" 10.....	The Frost & Wood Co.....	Smith's Falls.....	Implements.....
606	" 15.....	The Firstbrook Box Co.....	Toronto.....	Packing boxes...
607	" 13.....	The Frost & Wood Co.....	Smith's Falls.....	Implements.....
608	" 27.....	Canadian General Electric Co.....	Peterborough.....	Electric machines.....
609	" 24.....	The Percival Plow & Stove Co.....	Merrickville.....	Plows.....
610	" 28.....	Canadian General Electric Co.....	Peterborough.....	Electric Machines.....
611	" 4.....	D. S. Perrin & Co.....	London.....	Biscuits.....
612	" 7.....	Massey-Harris Co.....	Toronto.....	Implements.....
613	" 8.....	The J. B. Armstrong Co., Ltd.....	Guelph.....	Carriage Goods.....
614	" 11.....	Massey-Harris Co., Ltd.....	Toronto.....	Implements.....
615	" 11.....	D. S. Perrin & Co.....	London.....	Biscuits.....
616	" 11.....	The Wortman & Ward Co.....	"	Brick yard.....
617	" 21.....	Taylor-Forbes Co.....	Guelph.....	Hardware.....
618	" 20.....	E. Leonard & Sons.....	London.....	Engines, &c.....
619	" 21.....	Massey-Harris Co.....	Toronto.....	Implements.....
620	" 18.....	Fred Stearns & Co.....	Windsor.....	Pharmacists.....
621	" 19.....	Massey-Harris Co.....	Toronto.....	Implements.....
622	November 28.....	Reid Bros. & Co.....	London.....	Wholesale Stationery.....
623	December 29.....	Massey-Harris Co.....	Toronto.....	Implements.....
624	" 3.....	" "	Brantford.....	" .....
625	" 5.....	Canadian Shipbuilding Co.....	Toronto.....	Shipbuilding.....
626	" 6.....	The Riordon Paper Mills.....	Merritton.....	Paper mills.....
627	" 7.....	The Telfer M'f'g Co.....	Toronto.....	Paper boxes.....
628	" 1.....	" " "	"	" .....
629	" 13.....	Canadian Shipbuilding Co.....	Bridgeburg.....	Shipbuilding.....
630	" 26.....	The Telfer M'f'g Co.....	Toronto.....	Paper boxes.....
631	" 20.....	The Preston Furniture Co.....	Preston	Furniture.....
632	" 22.....	American-Abell Engine & Thresher Co.	Toronto.....	Foundry.....
633	" 15.....	The Riordan Papes Mills.....	Merritton.....	Paper mills.....
634	" 31.....	St. Lawrence Starch Co.....	Port Credit.....	Starch.....
635	" 23.....	The Hamilton Steel & Iron Co.....	Hamilton.....	Steel & Iron.....
636	" 27.....	The Goldie & McCulloch Co., Ltd..	Galt.....	Machinists.....

FOR 1906.—*Continued.*

Person Injured.	Age.	Particulars.	No.
Joachim Gorady	21	Nail on first finger of right hand taken out by the root, while stamping screws with a press.	592
Richard Price	17	Thumb of left hand cut off at first joint by a press, while putting cups in pan frames.	593
Donald Andrews	15	Second finger crushed in crank, while forming snow shovel cleats.	594
Harry O'Donnell	19	First, second and third fingers cut off by a press, while drawing zinc screws.	595
Wm. Burney	.....	While in the operation of wiping rollers on a press, he bent over and struck the lever, bruising two fingers badly.	596
B. Hinton	.....	Head cut above left ear; truck on elevator upset and fell on him.	597
David Bradshaw	58	Finger broken (through carelessness.	598
Orval Leonard	16	Badly bruised from knee to ankle; was crushed between car and motor	599
Arthur Gowitt	35	First finger crushed, while bending steel in a power press.	600
Fred Whitcroft	22	Wrench broke while tightening nut.	601
W. Noyes	15	While cutting paper insulation, passed hand under knives cutting tip off first finger of right hand.	602
Powet Bochmanski	52	Left hand crushed in rollers of a tire rolling machine.	603
R. G. Malley	.....	*Was seriously injured while oiling a shaft, from the effects of which he died two days later.	604
Royal Vandusen	.....	While piling stock on a bench, upset the bench, and some of the pieces of iron fell on him cutting his leg.	605
Albert Stewart	20	Right hand crushed between the rollers of a planer.	606
Cornell Foster	.....	Heel injured; caught between the platform of an elevator and the floor.	607
C. Clithcroe	.....	Eye cut, while chipping a piece flew up and struck him in eye.	608
Henry Rose	14	Arm broken; took hold of a revolving tap with the result that arm was twisted around spindle and broken above wrist.	619
E. Slight	.....	Two fingers bruised in a press.	610
Chas. Hockin	.....	While arranging a belt got his finger caught between shifter and cog wheel, thereby crushing it.	611
F. W. Parker	.....	Left hand caught between two trucks, with the result that third finger was badly lacerated.	612
Wm. Arrass	.....	Two fingers injured while operating shaper.	613
N. O'Hanley	.....	Corner of left eye burned by spark of iron splashing from the spout while cleaning off the brick previous to tapping the cupola.	614
James Howe	.....	While going up elevator allowed foot to be caught, bruising his large toe.	615
Alex. Murray	54	*Was struck in the bowels by a piece of emery wheel, which caused his death.	616
J. P. McLennon	.....	*Walked into a tank of hot water, and was so badly scalded that he died from the injuries.	617
G. Forsythe	.....	Broken toe, caused by a boiler plate falling on it.	618
Geo. Irwin	.....	The raising lever of binder flew up hitting him over the left eye, slightly cutting it.	629
J. Mifflin	28	While moving a cask, he allowed it to drop on his left foot crushing third and fourth toes.	620
J. Stewart	.....	While belting a machine, he slipped off a truck spraining his wrist and injuring his hip.	621
Irene Brown	16	Small piece taken off the top of first two fingers of left hand; put hand under die.	622
J. Dawson	.....	Left arm burnt severely by some hot iron.	623
David Mustard	24	Bone of second finger of left hand broken, while operating drop hammer	624
Angus McDonald	21	Bad sprain; slipped from a ladder.	625
John Mahoney	.....	While putting on a belt in the screen room, slipped and fell from the beam he was standing on to the floor below. Suffering a fractured shoulder blade and back badly strained.	626
Norman Carruthers	27	Second finger of right hand cut off at first joint in a paper box corner cutter.	627
S. Rosenbaum	.....	Thumb of left hand crushed in corner staying machine.	628
G. Mitchener	19	Was struck on the head by a wrench.	639
Miss L. Oppencouch	20	Second finger of left hand crushed in corner staying machine.	630
Simon Brown	.....	Ends of two fingers taken in a buzz planer.	631
Fred Trerswith	47	Hands, right arm and left leg burnt; while carrying hot iron, tripped and spilled iron on himself.	632
Harry Rowe	.....	Second finger of left hand caught between frame and revolving cylinder, thereby losing finger.	633
Henry Wilcox	.....	While stepping out of a railway car, he missed his footing and fell between car and platform, putting shoulder out of joint.	634
Peter Roscoe	.....	Hand cut on shears; piece of scrap iron, which he was cutting turned and drew his hand into guide.	635
Wm. Peddison	40	Leg broken just above the ankle and head slightly cut; while removing plates, one fell on him.	636

* Fatal.

APPENDIX.

AN ACT RESPECTING STATIONARY ENGINEERS.

Assented to April 20, 1907.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. In this Act "steam plant" shall mean and include a steam boiler, boiler and steam engine and every part thereof and thing connected therewith or used with reference to any such boiler or engine or under the care of an engineer, but nothing in this Act contained shall apply to the operation of any steam plant having a capacity of less than fifty horse power nor to steam heating plants operating at a pressure of 20 pounds or under, nor to the operation of a locomotive engine or steamboat or steamship engine.

(2) "The Board" shall mean the Board of Examiners to be appointed as hereinafter provided.

2. The Lieutenant-Governor in Council may from time to time appoint a Board of Examiners consisting of three competent and independent engineers practically conversant with the construction of boilers and the operation of steam plants, who shall hold office during pleasure, and who shall, subject to the regulations referred to in the next section, prescribe the subjects in which candidates for certificates of qualification as stationary engineers shall be examined, and who shall conduct examinations of candidates or provide for and supervise the examination of candidates and report thereon to the Minister of Agriculture.

3. The Lieutenant-Governor in Council upon the recommendation of the Minister of Agriculture may from time to time make regulations—

(*a*) For the examination of candidates for certificates of qualification, the granting of such certificates and the evidence to be furnished by candidates as to previous training or experience and sobriety and as to good character;

(*b*) For determining the time of continuance of such certificates and the renewal of the same;

(*c*) For fixing the fees to be paid by such candidates upon any such examination or for any certificate of qualification or renewal thereof;

(*d*) For prescribing the causes for which any certificate may be revoked, cancelled or suspended;

(*e*) For fixing the fees or other remuneration to be paid to the members and staff of the Board.

4.—(1) Upon the recommendation of the Board the Minister of Agriculture may issue certificates of qualification to stationary engineers on payment of the prescribed fees.

(2) Certificates of qualification may be cancelled at any time for good and sufficient reasons.

(3) Every stationary engineer shall, during the continuance of his certificate register with the Board on or before the 1st day of February of each year on a form to be furnished by the Board, and any stationary engineer who fails to comply with this regulation shall not be allowed to continue in charge of a steam plant unless by special permission of the Board.

5. No person who is not a holder of a certificate of qualification under this Act shall operate or have charge of any steam plant in the Province of Ontario after the first day of July, 1908, provided that in case of emergency a person not the holder of a certificate may be employed in operating any steam plant for a period not exceeding thirty days at any one time.

6. Every engineer who at the time of the passing of this Act holds a certificate of qualification from any Association of Stationary Engineers in the Province of Ontario, or who is the holder of a marine or locomotive engineer's certificate, or who shall be in charge of any steam plant of 25 h.p. or over operating in the Province of Ontario, or who has had at least two years' experience in the operation of a steam plant of 25 h.p. or over in the Province of Ontario, and who applies to the Board shall upon furnishing such evidence of good character and sobriety as the Board may require, and upon payment of the prescribed fee be entitled to receive a certificate of qualification from the Board.

7. The certificate held by any person under this Act shall at all times be exposed to view in the engine or boiler room in which such person is employed, and failing to keep such certificate exposed shall be *prima facie* evidence of the lack of qualification under this Act.

8. The provisions of this Act shall not apply to firemen or other workmen acting under the personal direction and supervision of any duly certificated engineer who is actually in charge of a steam plant, nor shall it apply to the employees of engine builders or steam plant contractors engaged in installing, setting up or testing boilers or steam plants.

9. Any person who feels himself aggrieved by the decision of the Board of Examiners may appeal therefrom to the Minister of Agriculture, upon giving such notice as the Minister may prescribe, and the decision of the Minister of Agriculture shall be final.

10. The Board of Examiners shall make a report in writing to the Minister of Agriculture on or before the 31st day of December in every year, showing—

(*a*) The number of certificates granted by them during the preceding year, and the persons to whom the same were granted;

(*b*) The number of applications for certificates refused during the preceding year and the causes for refusal;

(*c*) The number of certificates revoked, cancelled or suspended during the preceding year, and the causes for the same;

(*d*) The amount of fees received by them from candidates or holders of certificates during the preceding year;

(*e*) Upon such other matters as may be directed by the Minister of Agriculture or the Lieutenant-Governor in Council.

11. Except as provided in section 5 of this Act every person who operates a steam plant as the engineer in charge thereof without the license or certificate required by this Act, and every person employing him or permitting him so to do shall be liable upon summary conviction to a penalty of not less than $10 nor more than $25 besides costs.

12. Nothing in this Act shall prevent any inspector appointed under the Ontario Factories Act from being appointed a member of the Board of Examiners, and it shall be the duty of the Inspectors of Factories to assist in the enforcement of this Act, to report to the Board any violation of section 5 or section 7, and also to furnish to the Board such information as they may have from time to time as to the conduct and capability of any person holding a certificate from the Board or applying for the same.

13. Sections 20 to 32, both inclusive, of the Act respecting Stationary Engineers, as enacted by section 1 of the Act passed in the 6th year of His Majesty's reign, chaptered 26, are repealed and section 19 of the said Act respecting Stationary Engineers is amended by striking out the words added thereto by section 3 of the said Act passed in the 6th year of His Majesty's reign.

APPENDIX

TO THE

Nineteenth Annual Report

OF THE

Inspectors of Factories

FOR THE

Province of Ontario

1906.

Devices for Guarding Dangerous Machinery.
Systems for Removing Dust, Chips, etc.
Methods of Heating and Ventilation.
Abstract of Ontario Factory Laws pertaining thereto.

PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

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1907

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TORONTO.

APPENDIX

TO

Report of Inspectors of Factories

INTRODUCTION.

This Appendix to the Nineteenth Annual Report of the Inspectors of Factories for the Province of Ontario contains illustrations of practical devices for guarding dangerous machinery, etc., and systems for removing dust, chips, and other deleterious material, together with methods of heating and ventilating.

It also contains an abstract of Ontario factory laws pertaining to sanitation, heating, ventilation, removal of dust and gases, the guarding of dangerous parts, storage of inflammable material, fire protection, and the inspection of factories before being operated.

In submitting this report to manufacturers and workmen to assist them in devising and procuring methods of protection the Inspectors do not necessarily endorse any of the devices presented herein, except such as are explicitly set forth as requirements of the Factories Act. There may be other devices equally as good. The illustrations shown have been gathered from time to time by the Inspectors, and are reproduced with the permission of the makers. This explanation is made in order that Inspectors may not be unjustly charged with advocating certain methods of protection.

It might be pointed out with advantage that in the Province of Quebec the manufacturers have subscribed generously to a fund for the purchase of models and cuts of safety appliances that might be adopted in whole or in part as a preventive against accidents. In that province the law requires the manufacturer to provide an emergency box or medicine chest, and in some cases manufacturers are so interested in this work as to employ medical men to come to their factories and instruct their employes as to the methods to follow when using these auxiliary appliances in event of an accident.

With the co-operation of the manufacturers, the Department of Factory Inspection in the Province of Quebec has organized a museum of models, cuts, photographs, and working devices, which is being continually supplemented with the latest devices for the protection of the workmen and the education of the manufacturer. In this Quebec is but following in the work which is successfully established in older countries. Munich has a Museum of Security, established in 1900; Amsterdam has a Museum of Security, established in 1903; Berlin has a Museum of Security, established in 1903; Paris has a Museum of Security, established in 1905.

The American people, also, have awakened to the needs for a permanent institution of this kind in every state. As a preliminary to the establishment of such institutions, the American Institute of Social Service held an exposi-

tion of devices for safeguarding the lives and limbs of workmeen from January 28th to February 9th, at Seventy-ninth Street and Central Park West, New York City. The exhibit consisted of models of machines of actual or reduced size in operation and also photographs.

The Section of Industrial Hygiene consisted of the various movements for improved housing, and different phases of organized effort to prevent tuberculosis, illustrating the best English and European institutions and societies by means of lantern views and lectures.

Ontario was represented at that exhibition by Mr. Keilty, one of the Inspectors, who gathered there some of the illustrations shown in this report.

The following significant statement appears in a booklet published by the American Institute of Social Service: "It is not enough that we pay accident insurance, or that some provision is made for the bereaved famiiy; suffering and bereavement have no money equivalents. Prevention is better than compensation or charity. We commend the common sense of those who build a fence at the top of a precipice even more than we admire the philanthropy of those who keep an ambulance at the bottom."

There was reported to the Inspectors in Ontario in the year 1904, 638 industrial accidents; in the year 1905, 633; and in the year 1906, 636. Of this total 95 were fatal. While in no case criminal negligence was charged, it is obvious that if manufacturers and workmen would enter into the true spirit of protection, much of this slaughter could be avoided.

It is undoubtedly true that some accidents are inevitable in spite of possible precautions; but the records of accidents in European countries, as well as in our own, show beyond reasonable doubt that a great portion of our industrial accidents can be avoided.

An official investigation of 15,970 accidents in Germany showed that 53 per cent. of them were avoidable. This record from a country such as Germany would indicate that there is much yet to be done by way of protection in our own country. If an accident is avoidable, some person is to blame for it. It is but natural that accidents follow the want of proper care and protection.

This subject could go on indefinitely. In fact, it might be said truthfully that the proofs and records that could be set forth in demand for greater protection are inexhaustible. But as this report is intended rather to show some of the devices for protecting dangerous parts, a review of statistical data must necessarily be brief.

It might be added that there are many other devices of safety equally practical, as well as many other dangerous parts incidental to manufacturing, not mentioned here; but to mention all would make an endless publication, and therefore the reason for presenting but a few is apparent.

It is hoped that manufacturers and workmen will avail themselves of the information contained herein, and that this work will be of benefit to all concerned.

The illustrations shown herein are numerically arranged and briefly described according to their numbers. On page 76 will be found an Index giving the names of the makers, in so far as is known.

STEEL PLATE FANS.

Fig. 1 shows a design of steam and electric driven fans, which are appliable under all conditions where a considerable quantity of air is required, at a pressure not inordinately high—for instance, exhausting smoke or gases from forging shops, dust or shavings from all places where such is generated, induced, or forced drafts for heating or ventilating buildings, etc. For a full description of their application to various industries persons interested should consult the makers.

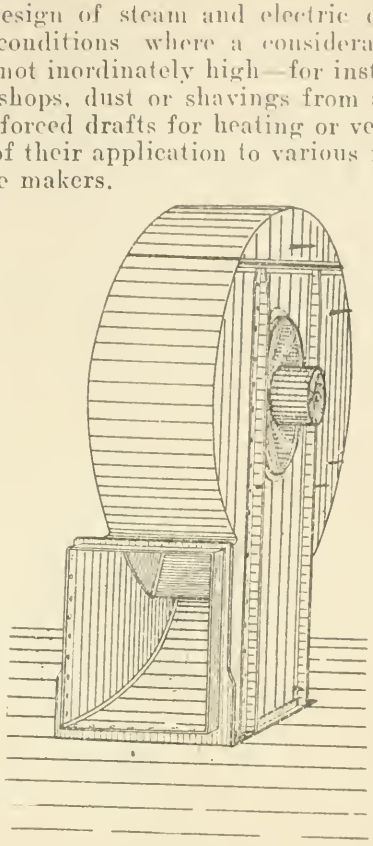


Fig. 1. Steel Plate Blower. Bottom horizontal discharge, right-hand.

Sizes of Branches for Machines.

Pipes for ordinary machines, such as Saws, Planers, Matchers, Tenoners, etc.

Saws.	Dia. of Branch Pipe.
Rip, Cut off, Split, 18 in. diameter or less	4 in.
Swing, Bracket, Groove, 18 in. to 24 in. diameter	5 in.
Heavy cut off saw 24 in. to 42 in.	6 in.
Band saw	4 in.
Band Re-saw ¾ to 1 inch	5 in.
Band Re-saw 1½ to 2½	6 in.
Planer knives 10 in. long	5 in.
Planer knives 14 in. long	6 in.
Planer knives 24 in. long	7 in.
Matcher heads, each	5 in.
Door Tenoner	5 in.
Sticker machines, each head	5 in.
Sand drum, 30 in. long	6 in.
Sweep-up	7 in.
Heavy timber planer each head	7 in.

Where branch pipes are longer than twenty feet or have an excessive number of elbows they should be increased proportionately in size. When the work is light and the branch pipe short smaller connections can sometimes be used.

Moulders, buzz planers, pony planers, jointers, and all other machines having knives or saws of dimensions given, will require pipes of the respective diameters given in table. Timber planers require twenty-five per cent. larger pipes than ordinary planers.

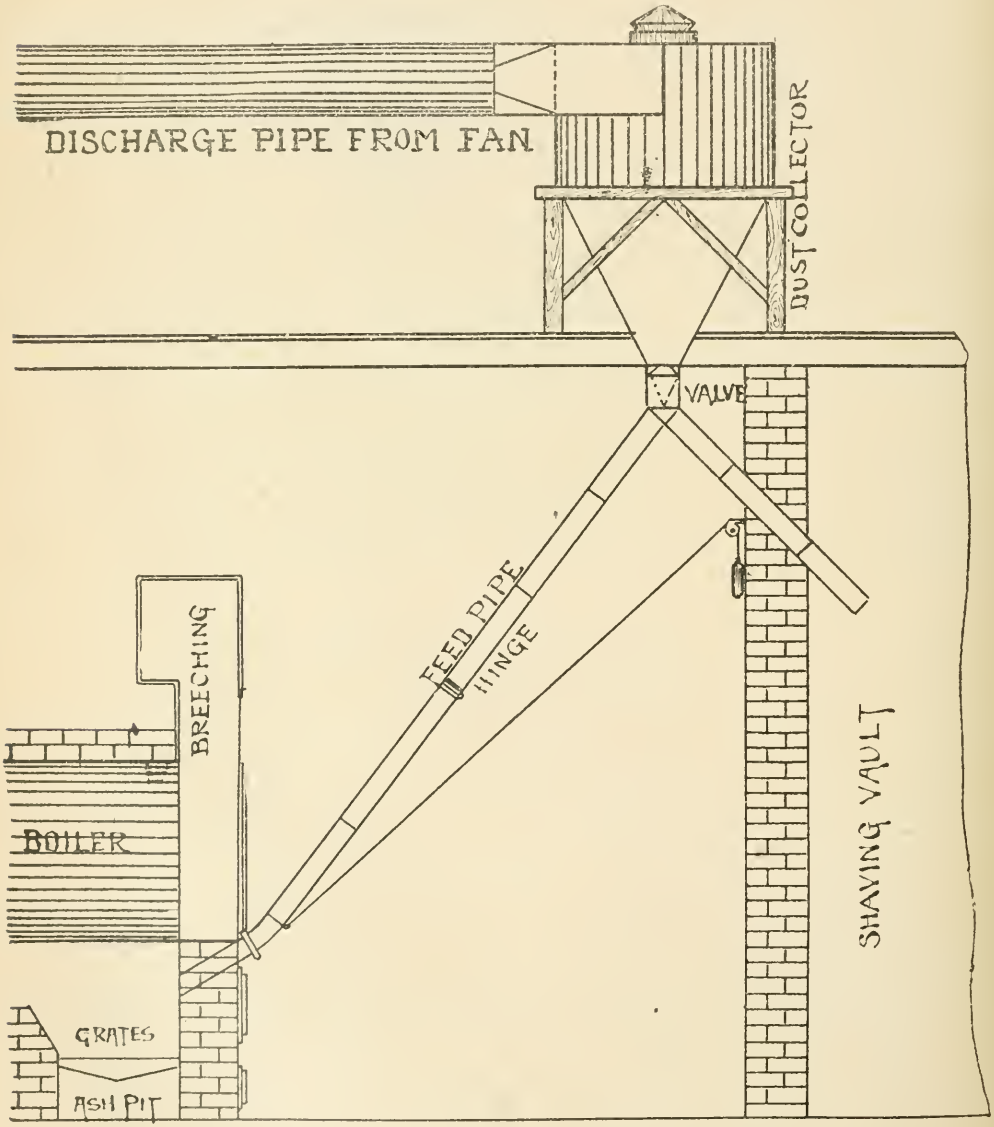


FIG. 2. Exhaust System of firing boilers.

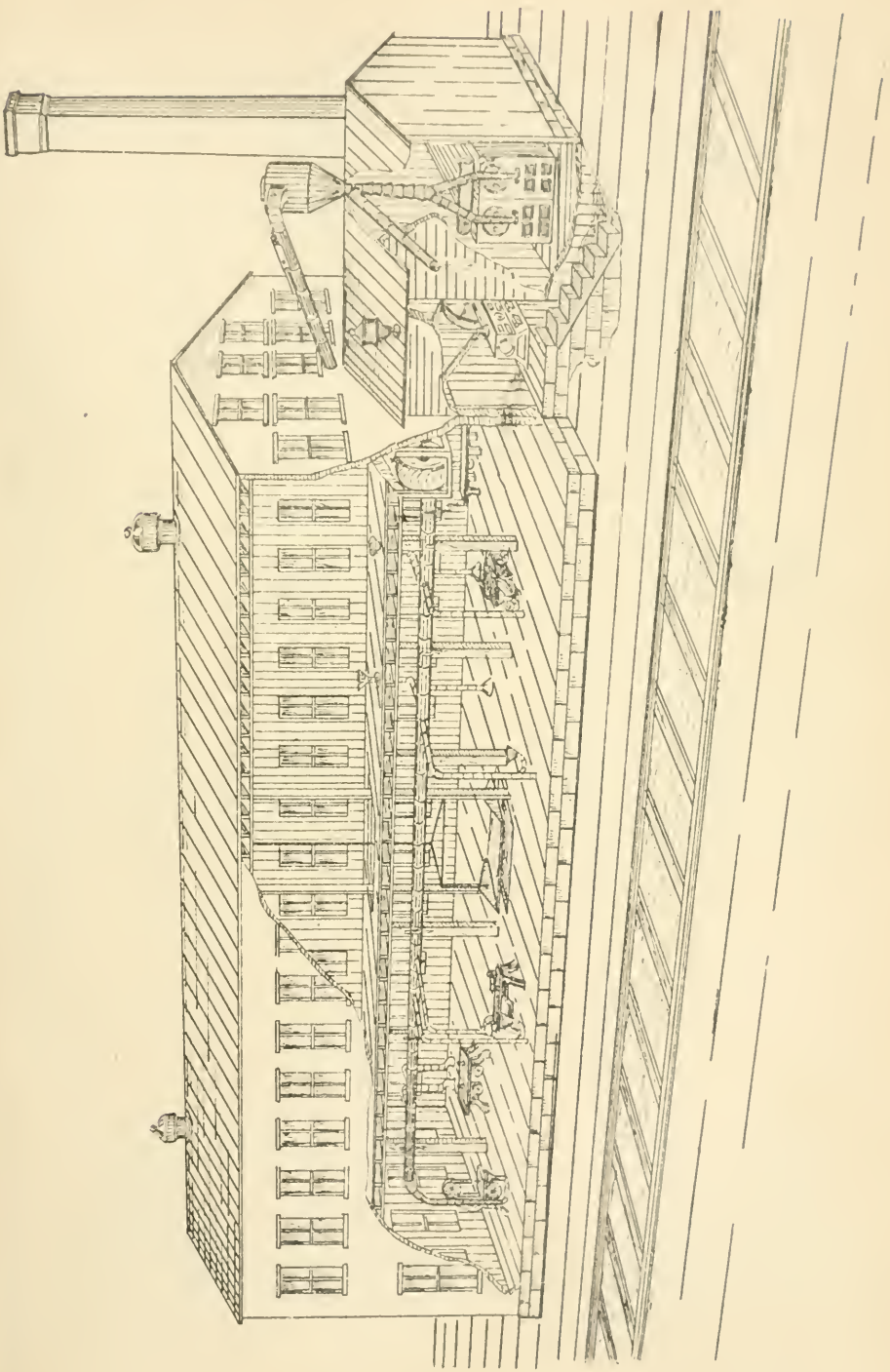


FIG. 3. Exhaust System as applied in a Wood Working Factory.

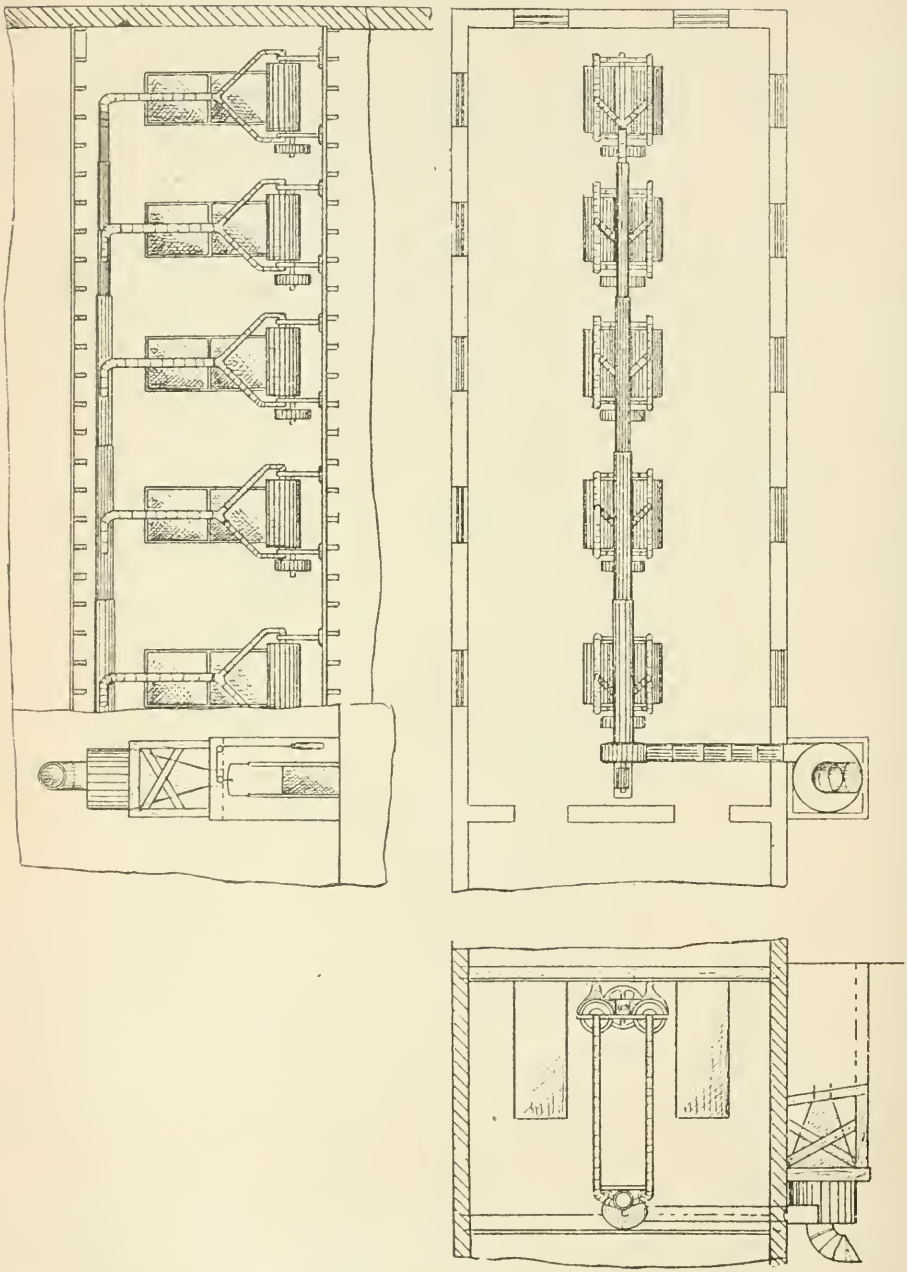


FIG. 4. Exhaust System as applied to Tumbling Barrels in Foundries.

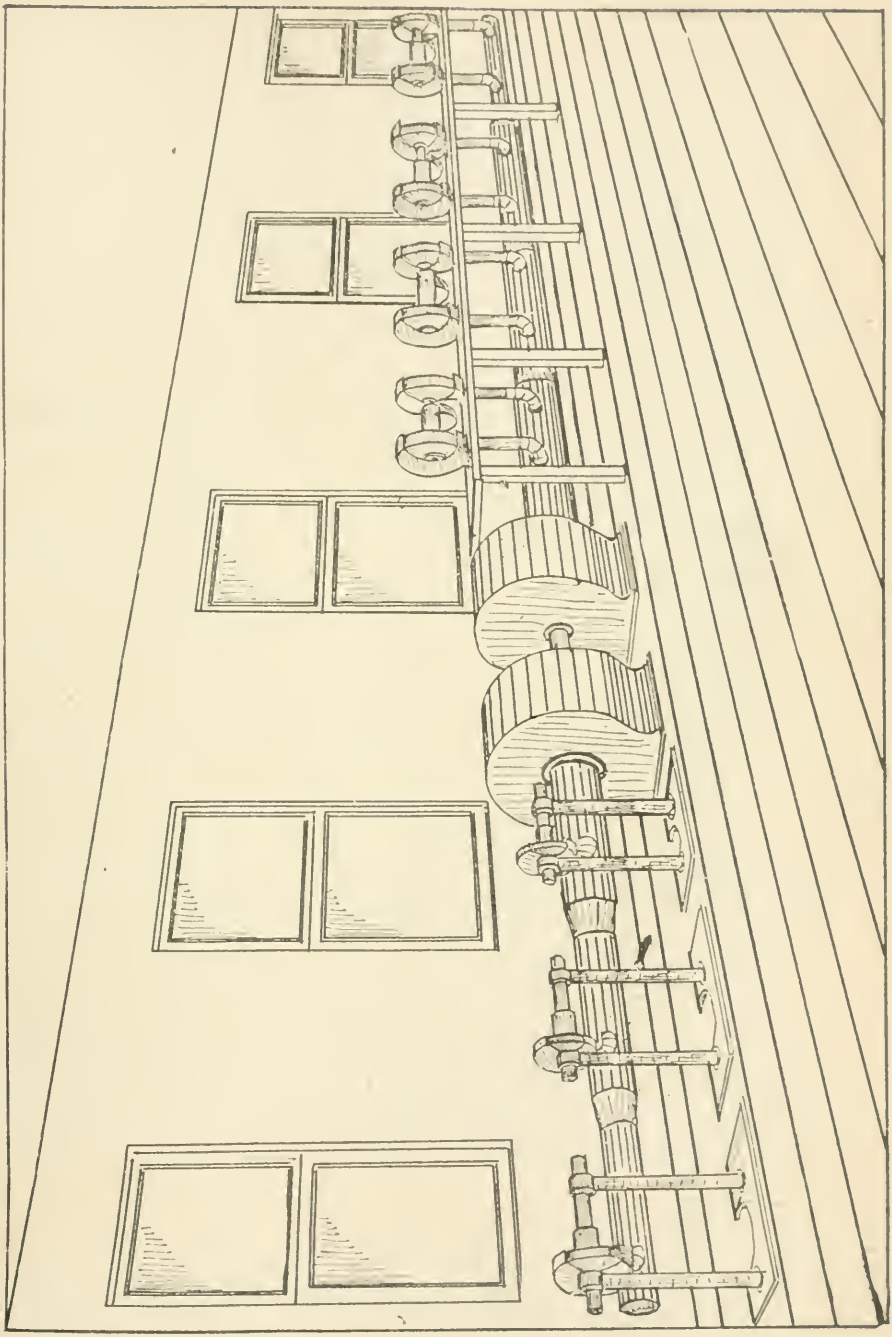


FIG. 5. Exhaust System as applied in Buffing and Polishing Room.

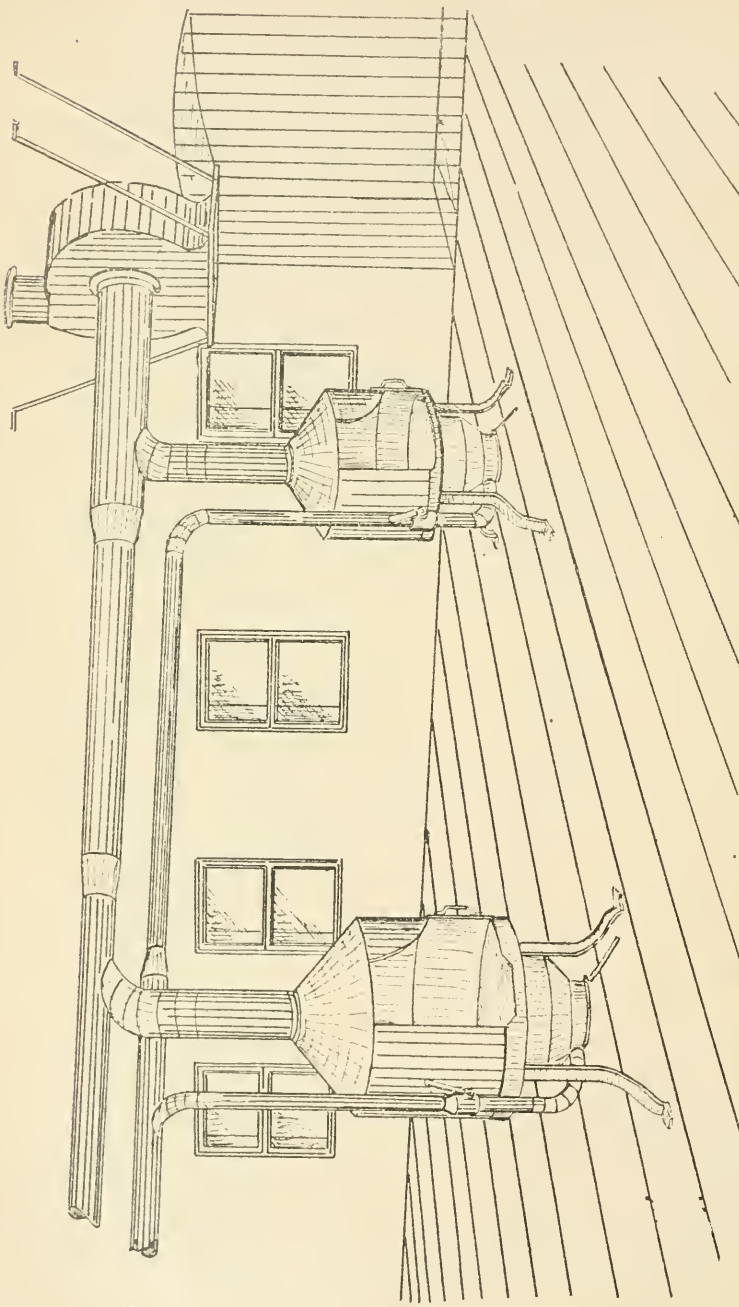


FIG. 6. Exhaust System as applied to Blacksmith's Forges for Blowing Fires and Removing Smoke and Gases.

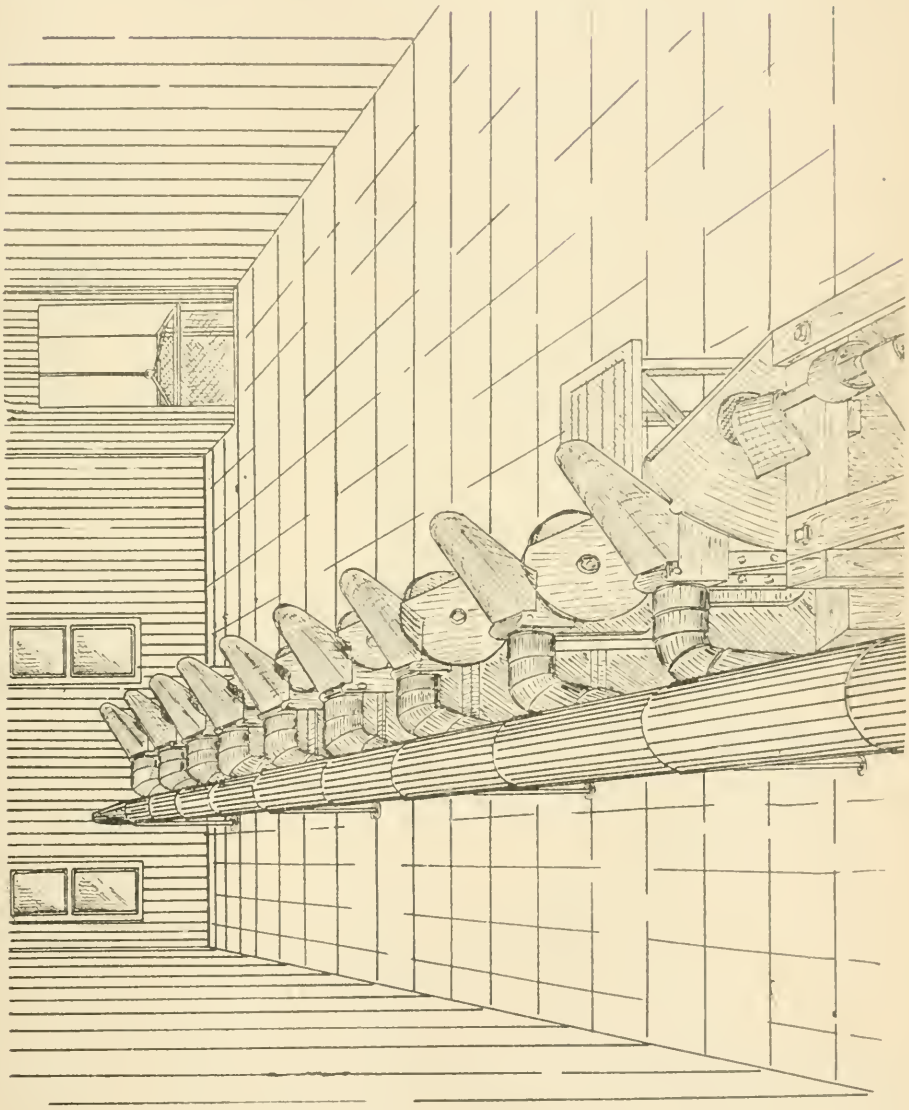


Fig. 7. Exhaust System as applied to Emery Grinding.

Figs. 8, 9, 10, 10 (*a*), 10 (*b*), and 10 (*c*) show devices for protecting emery wheels and grind stones. There are many causes given for the bursting of emery wheels and grind stones. The guards shown in these cuts should reduce the possibility of accident from this source to a minimum. The clamp safety collar shown in Fig. 10 (*b*) provides for square grinding on the side of the wheel, where the convex wheel, shown in Fig. 10 (*c*) would be objectionable. This class of wheel is also made with one flat side, as may be required for saw gumming, etc.

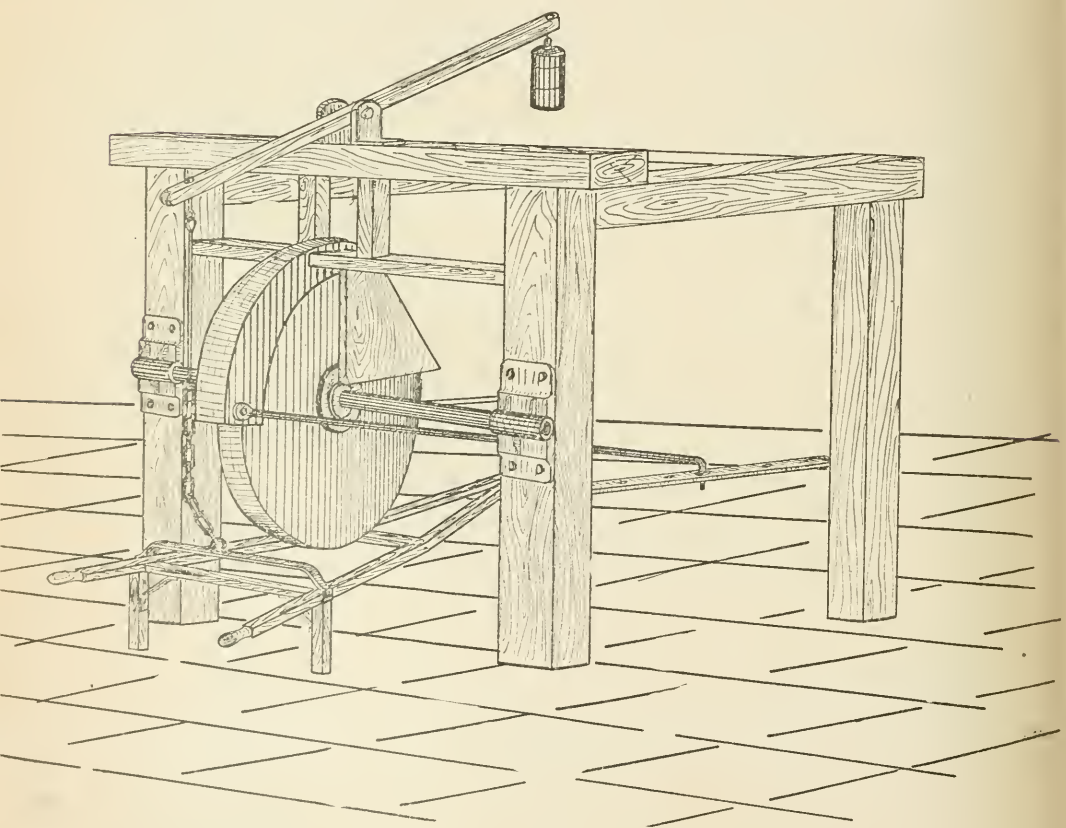


Fig. 8. Hood for Grindstone.

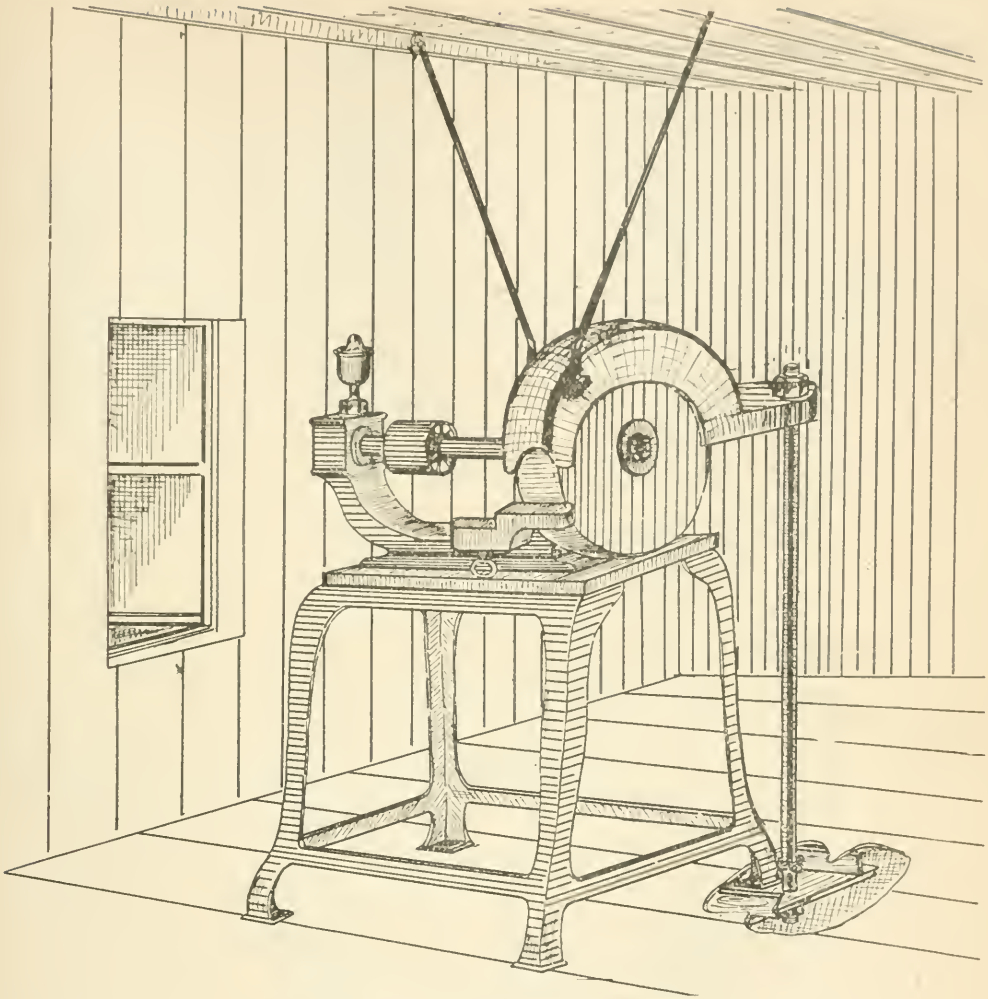


Fig. 9. Hood for Emery Wheel.

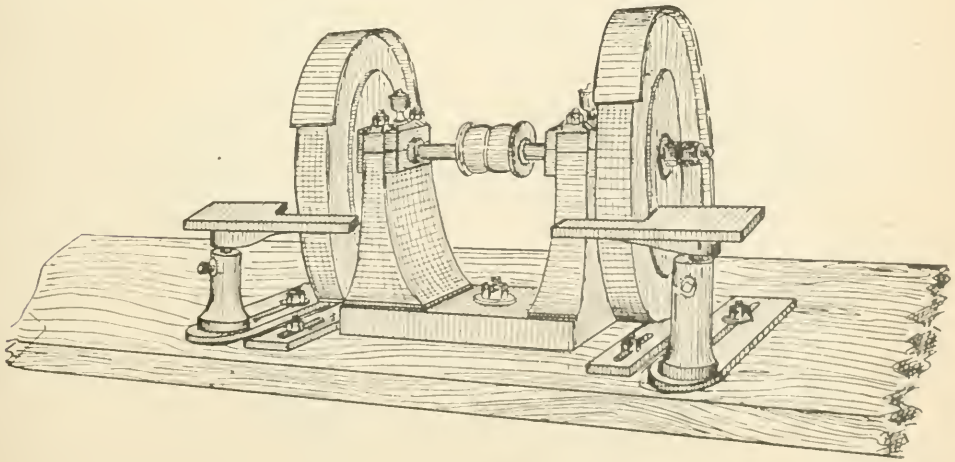


Fig. 10. Emery Wheel Guard.

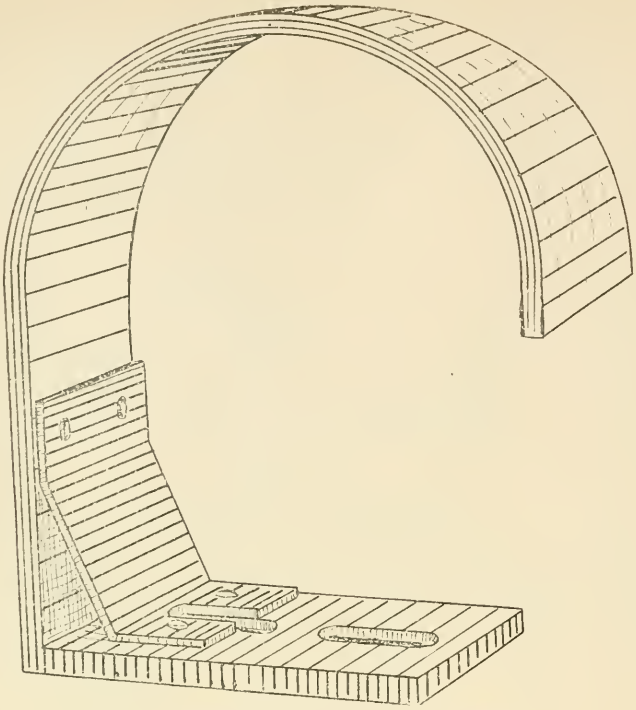


FIG. 10(*a*). Emery Wheel Guard.

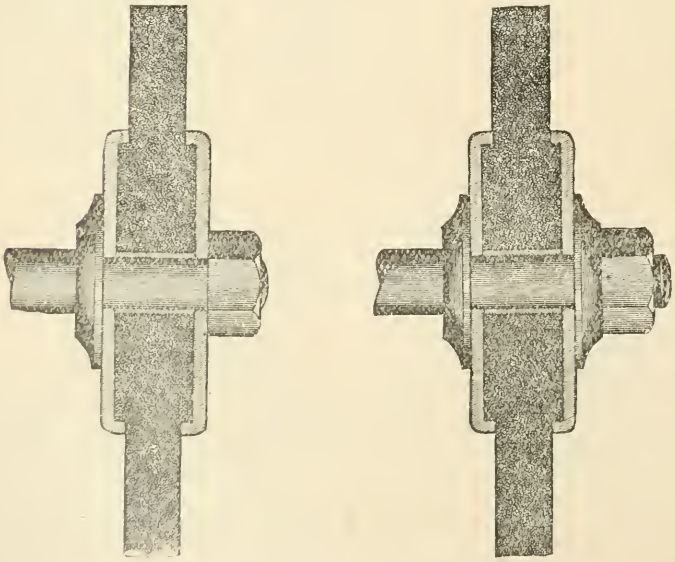


FIG. 10(*b*). Clamp Safety Collars.

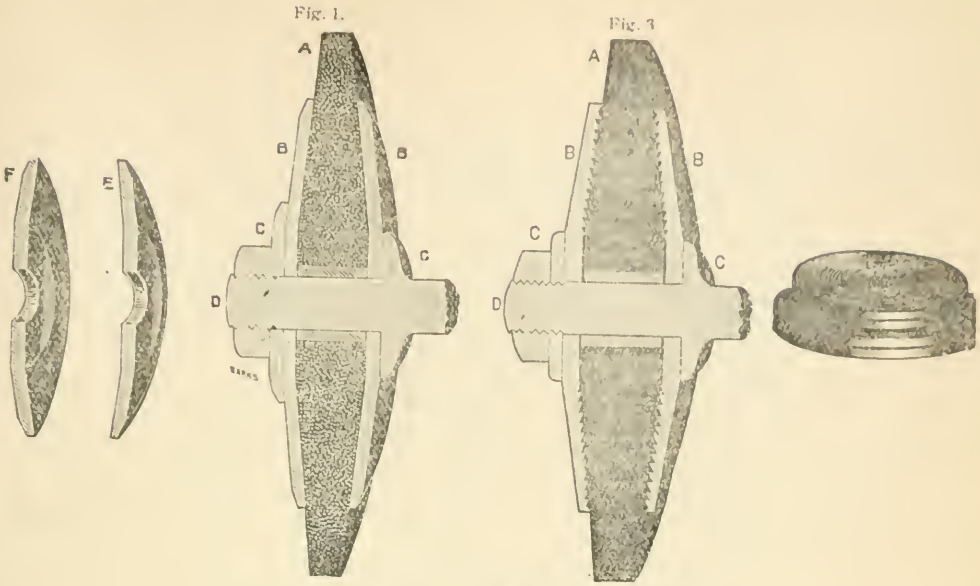


Fig. 10(*c*) Safety Emery Wheels and Safety Collar.

SHAPER GUARDS.

Figs. 11 and 11 (*a*) show a style of shaper guard. The same guard is made in another pattern adapted for buzz planers.

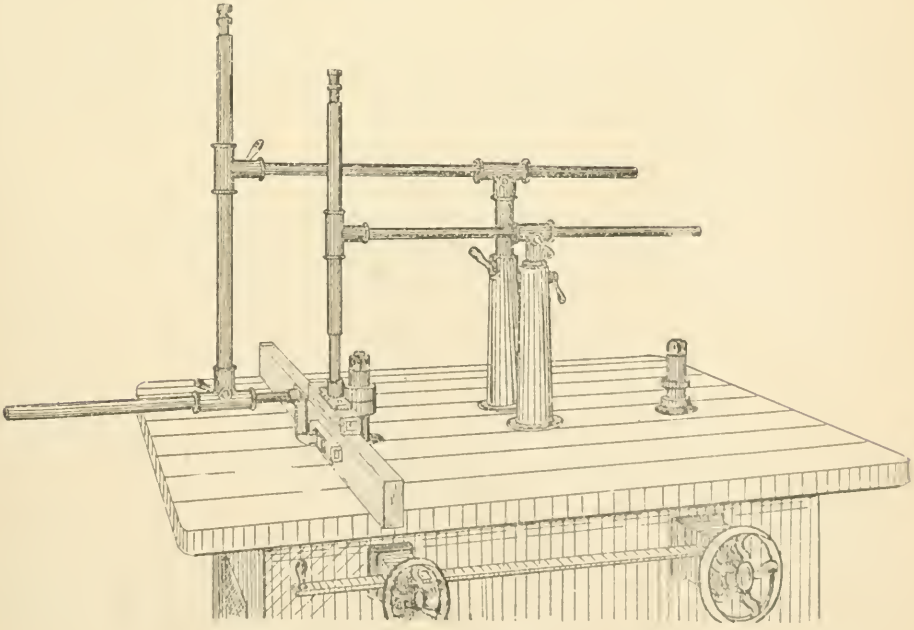


Fig. 11. H. H. Steer Shaper Guard.

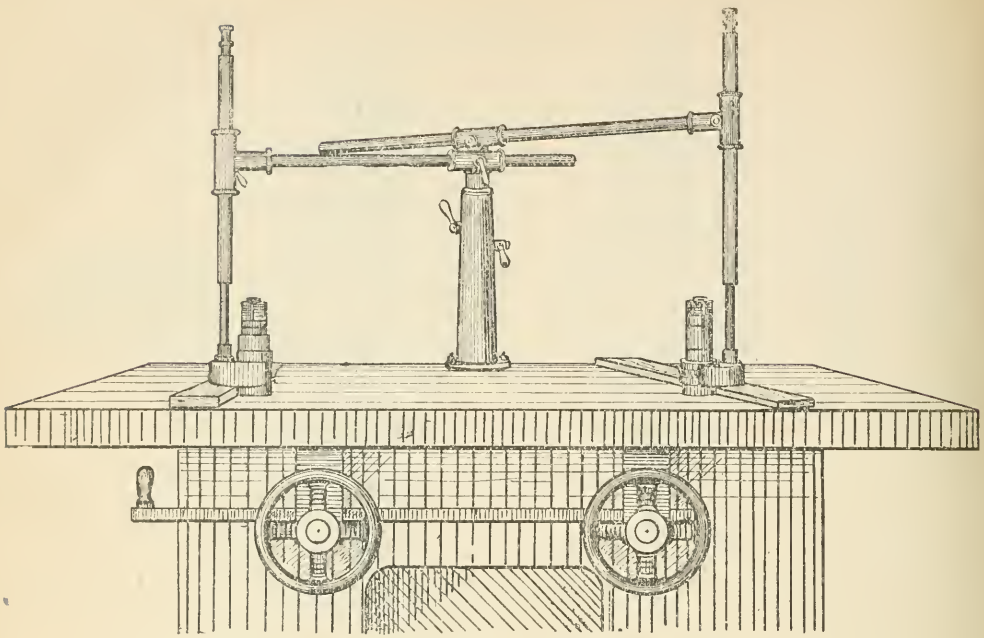


FIG. 11(*a*). Safety Guard for Wood Shaper.

Figs. 12, 13, 14, 15, and 15 (*a*) show some of the other styles of shaper guards commonly used. The wood shaper is numbered among the most dangerous of wood-working machines. Yet this machine can be made reasonably safe by the use of proper guards, and a shaper should never be used without such guards.

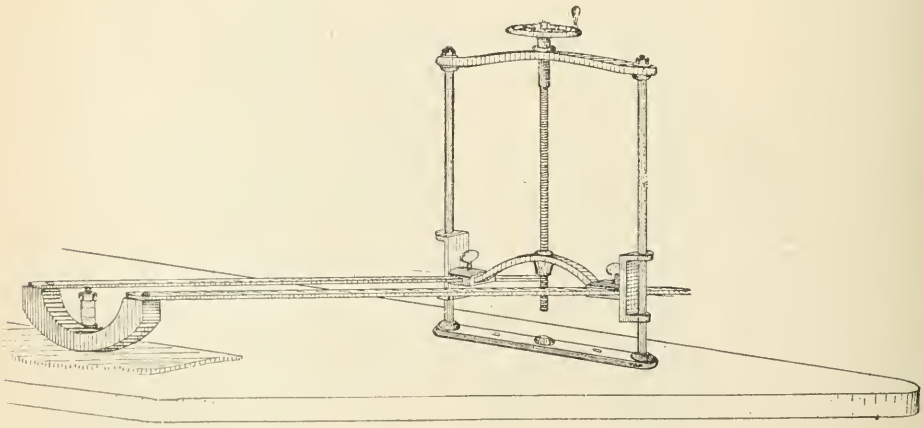


FIG. 12. Safety Guard for Wood Shaper.

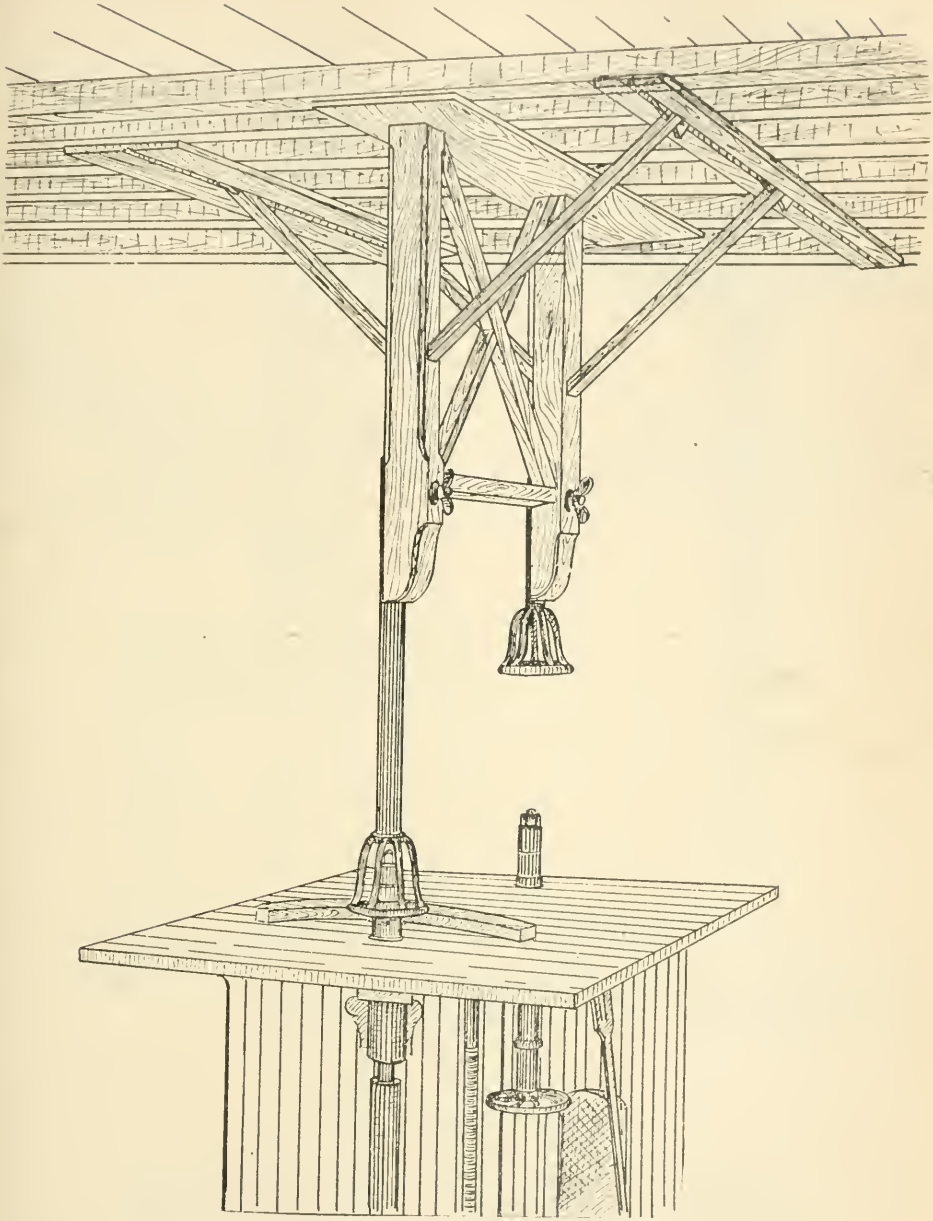


Fig. 13. Guard for Wood Shaper

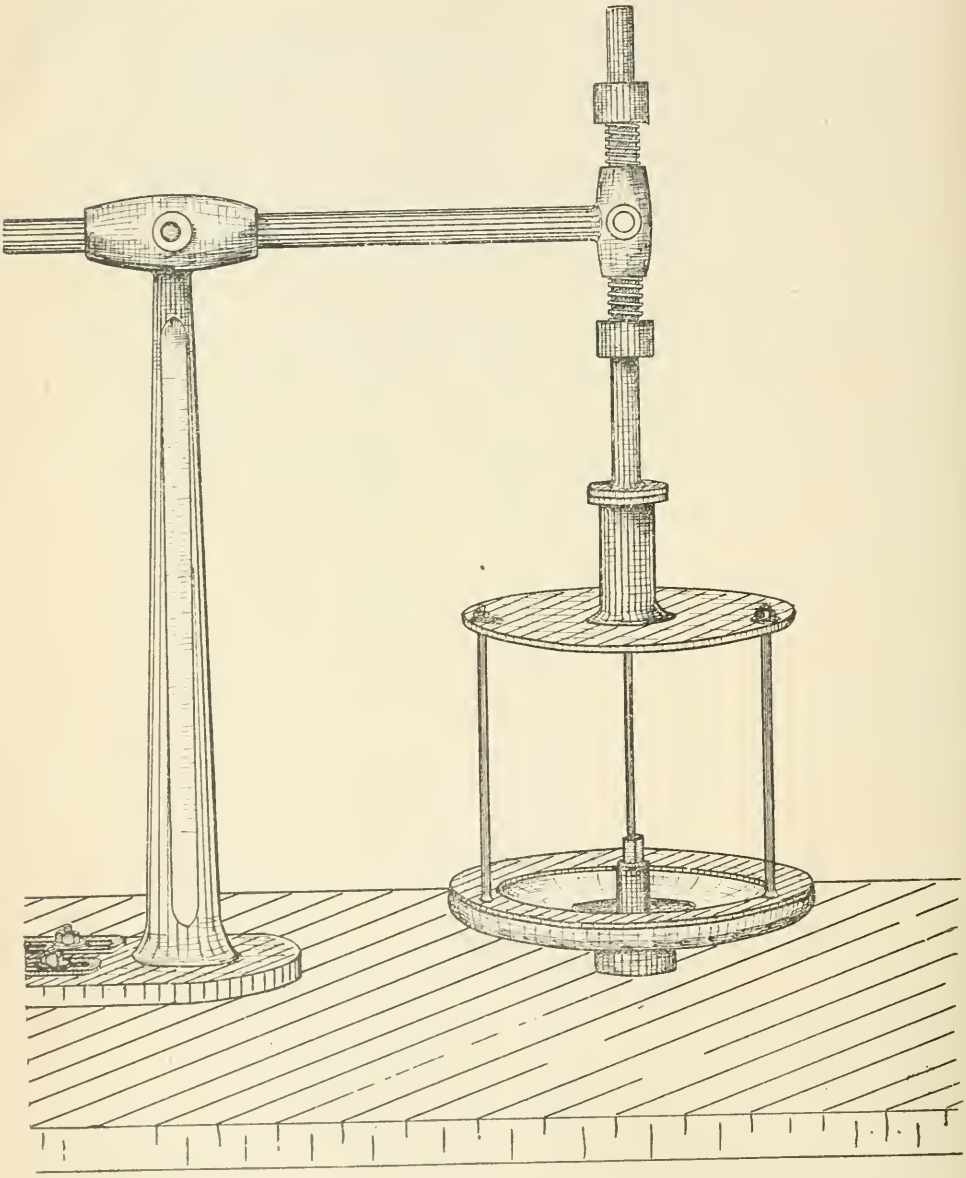


Fig. 14. Safety Guard for Wood Shaper.

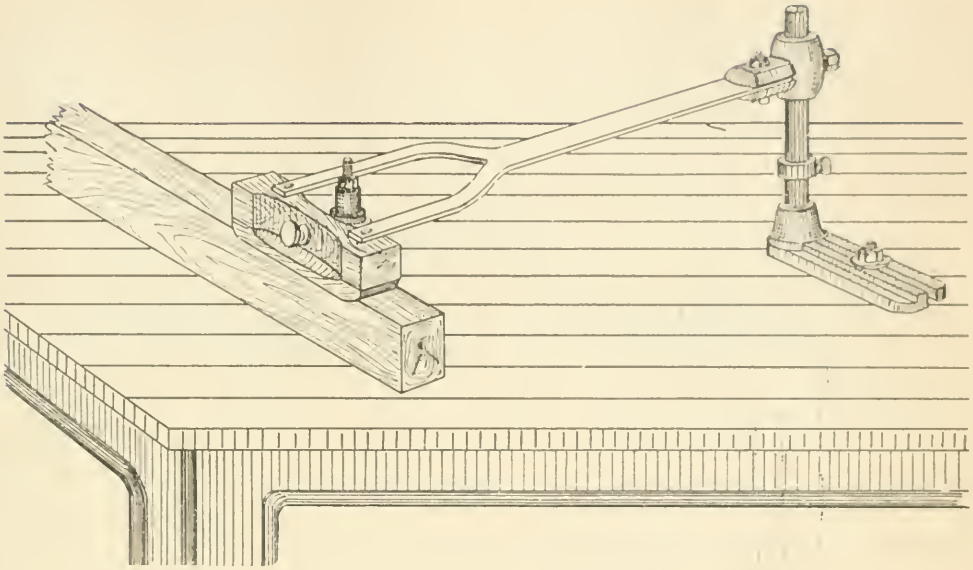


Fig. 15. Safety Guard for Wood Shaper.

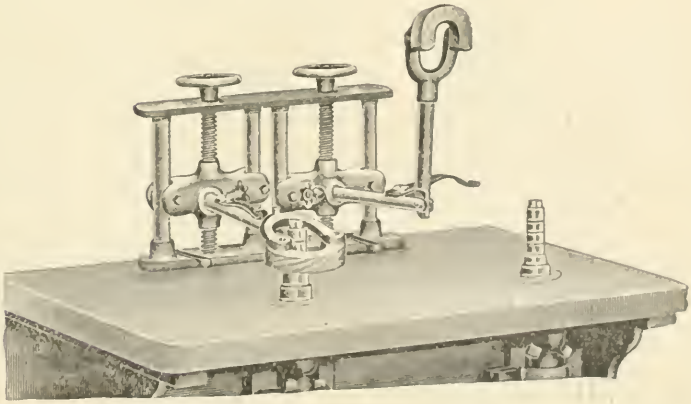


Fig. 15(*a*). Wood Shaper Guard.

BUZZ PLANER GUARDS.

Figs. 16, 17, 18, 18 (*a*), 18 (*b*), and 18 (*c*) shows different kinds of guards for protecting the buzz planer or universal wood-working machine. It is needless to say that these are on record as being very dangerous, and have contributed to very many serious accidents. They should be at all times surrounded with all the protection available.

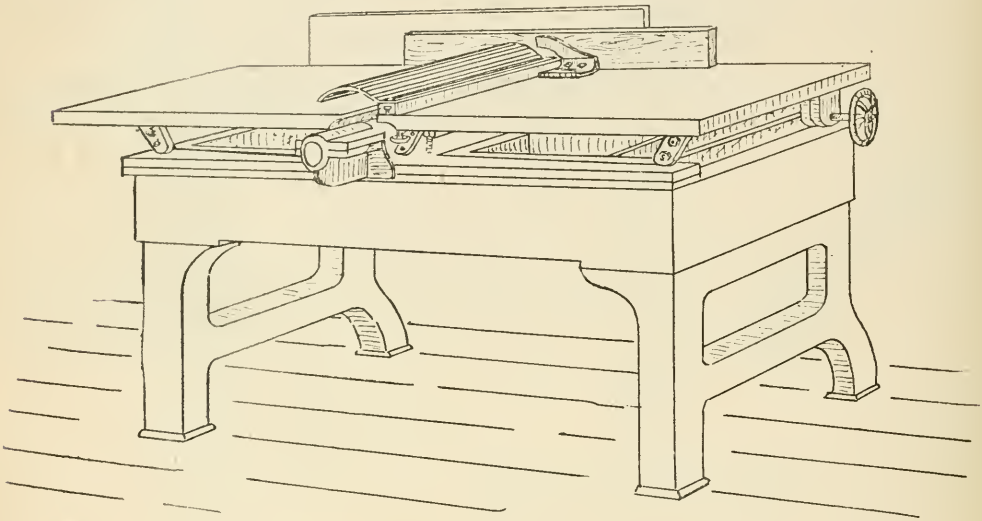


FIG. 16. Guard for Planer.

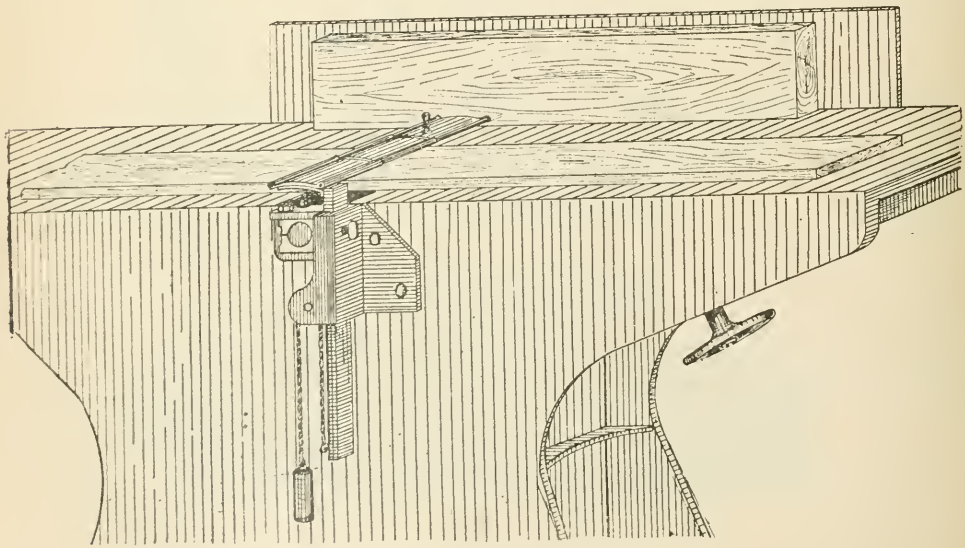


FIG. 17. Buzz Planer Guard.

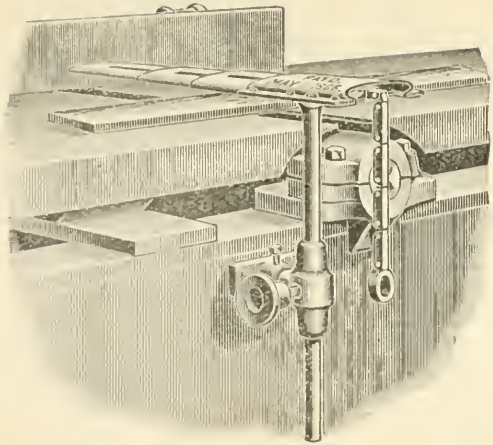


Fig. 18. Jones' Buzz Planer Guard.

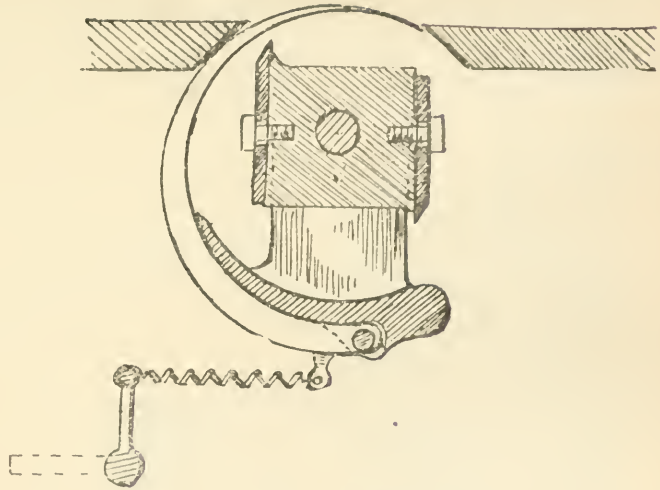


Fig. 18(*a*). Buzz Planer Guard.

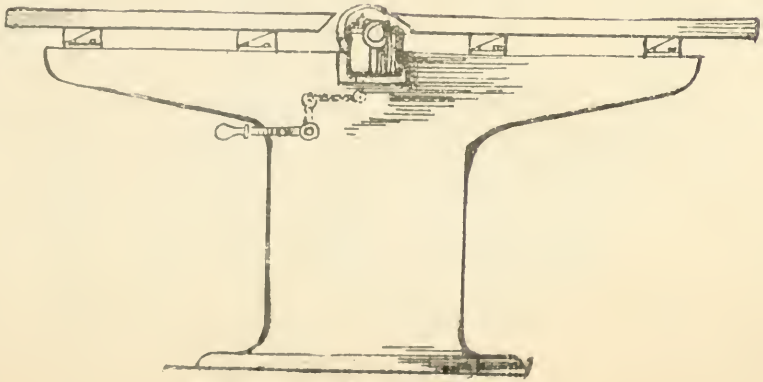


Fig. 18(*b*). Guard for Buzz Planer.

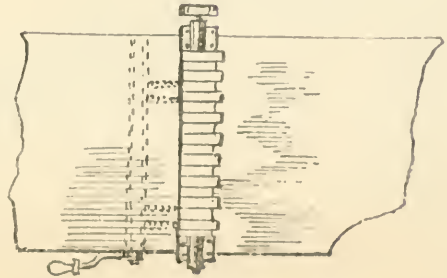


Fig. 18(*c*). Guard for Buzz Planer.

SAW GUARDS.

Figs. 19, 20 21, 22, 23, 24, 24 (*a*) and 24 (*b*) show a variety of saw guards. The number of accidents recorded from this source puts these machines in a class almost by themselves. When practicable, they should never be operated without a guard.

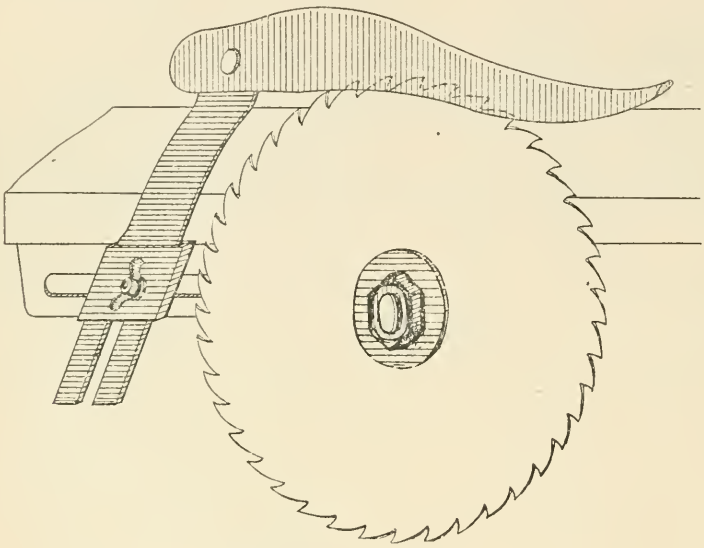


FIG. 19. Saw Guard.

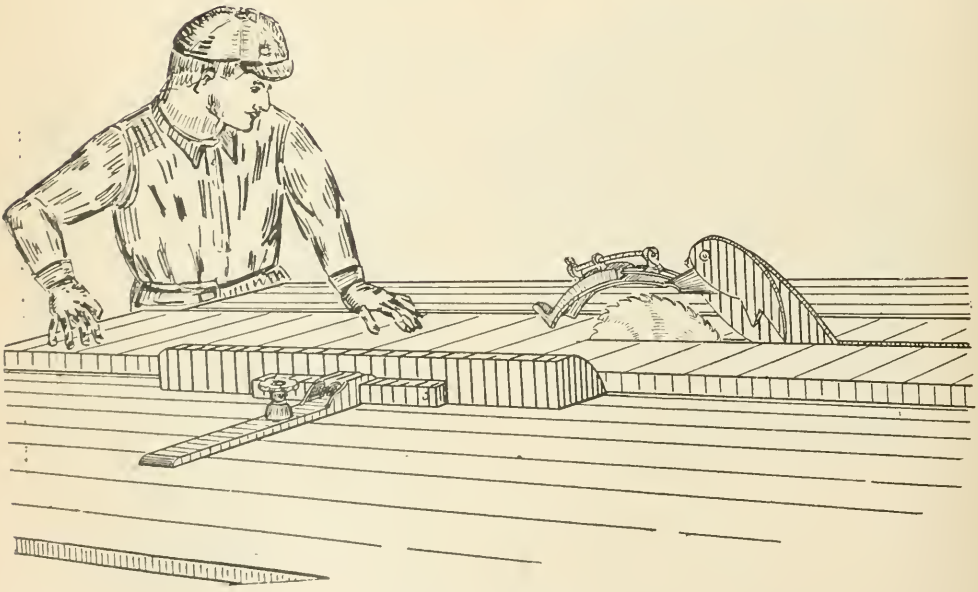


FIG. 20. Saw Guard.

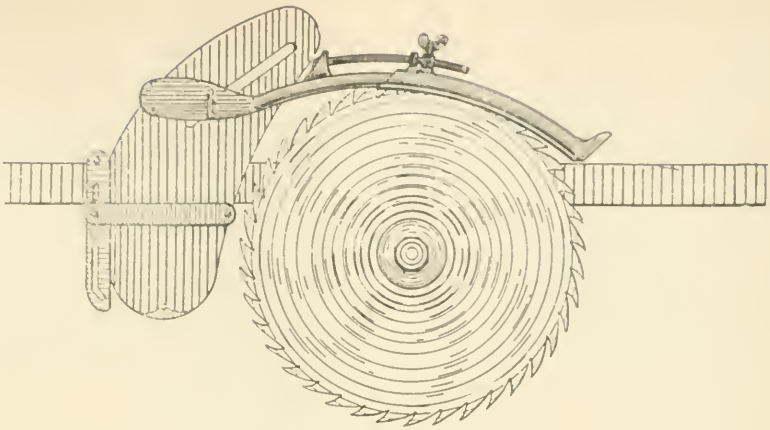
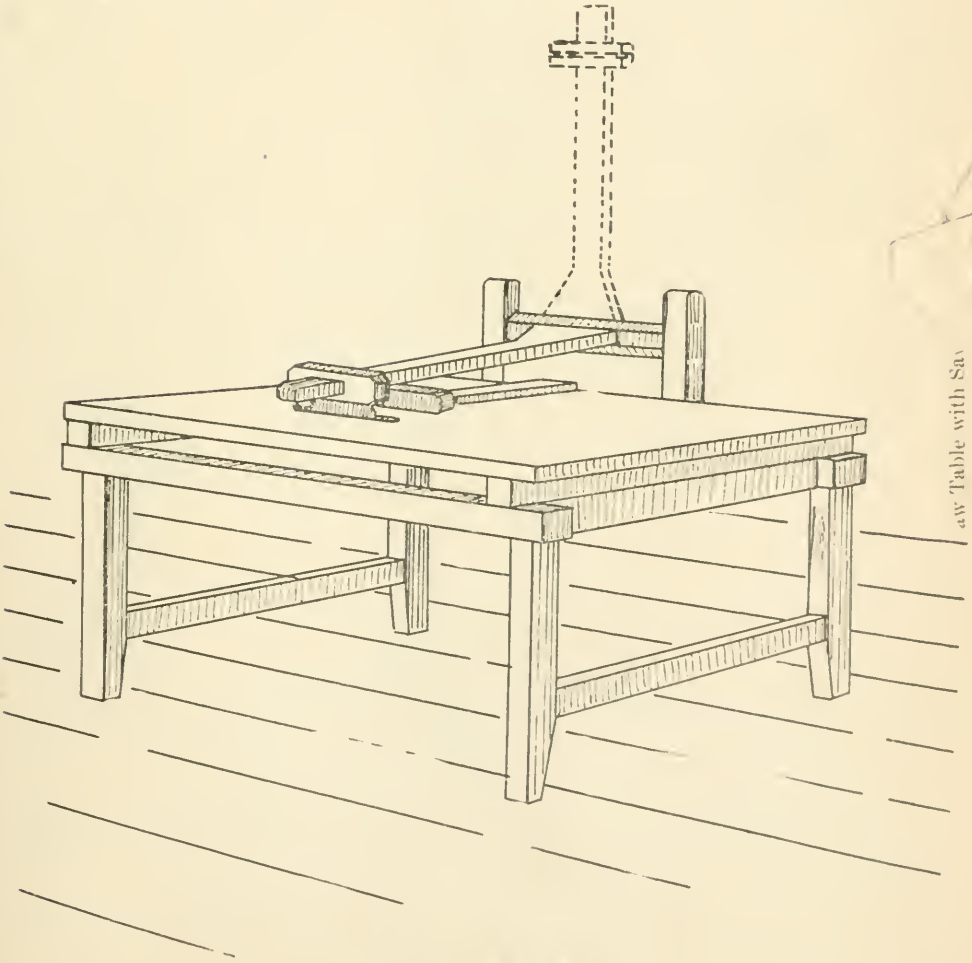


Fig. 21. Saw Guard.



aw Table with Sa

Fig. 22. Saw Guard.

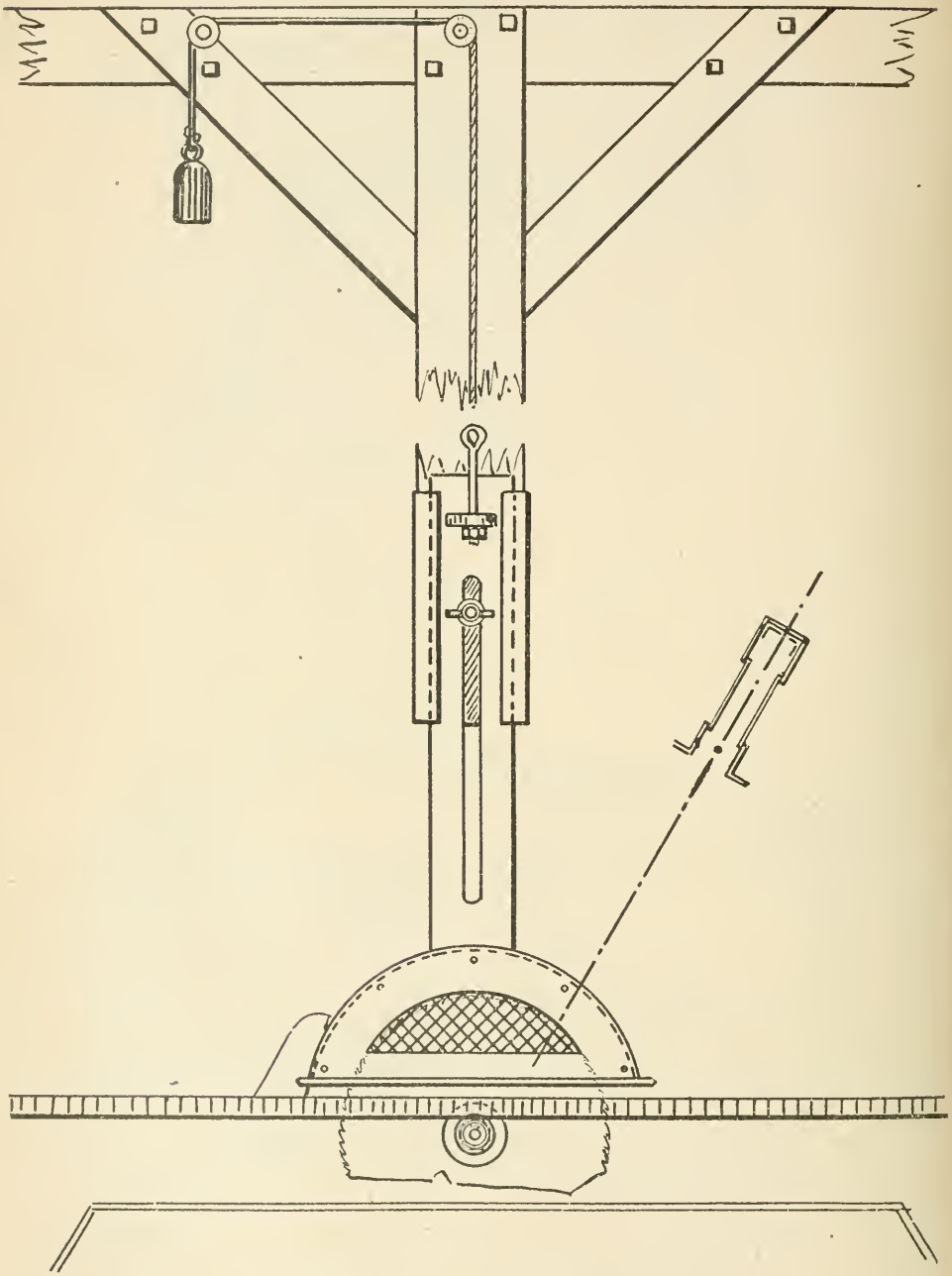


FIG. 23. Adjustable Saw Guard.

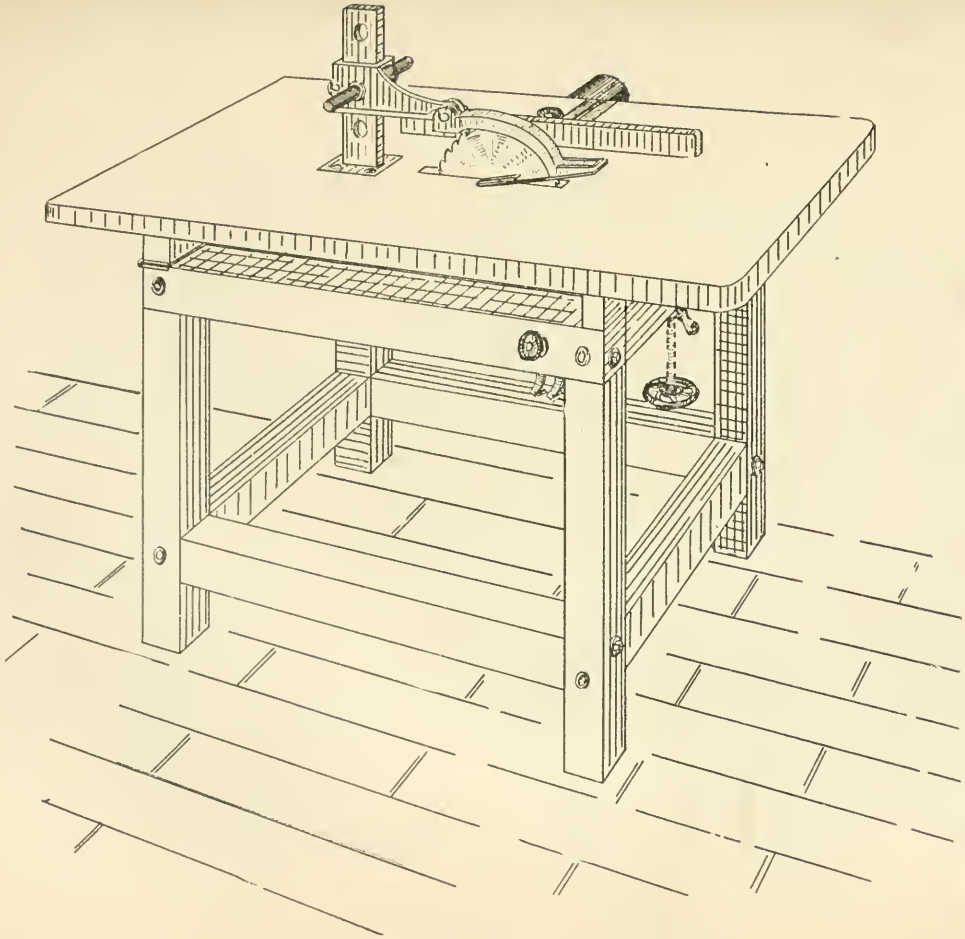


Fig. 24. Adjustable Saw Table with Saw Guard.

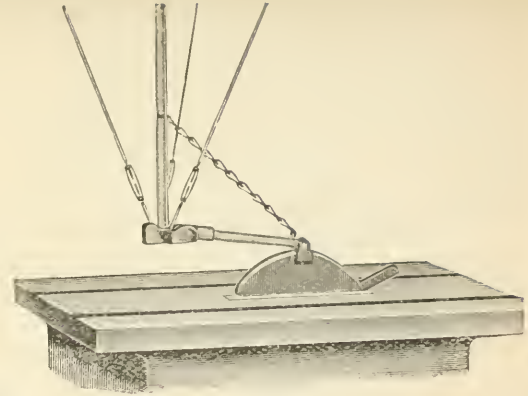


Fig. 24(*a*). Circular Saw Guard.

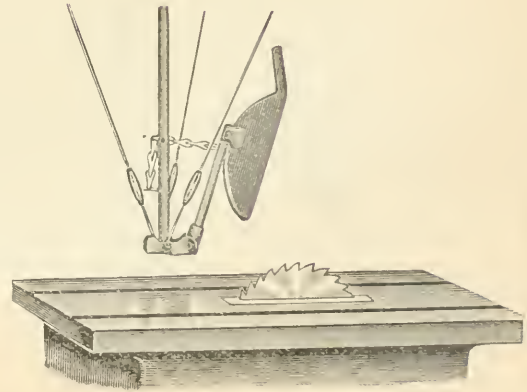


Fig. 24(*b*). Circular Saw Guard.

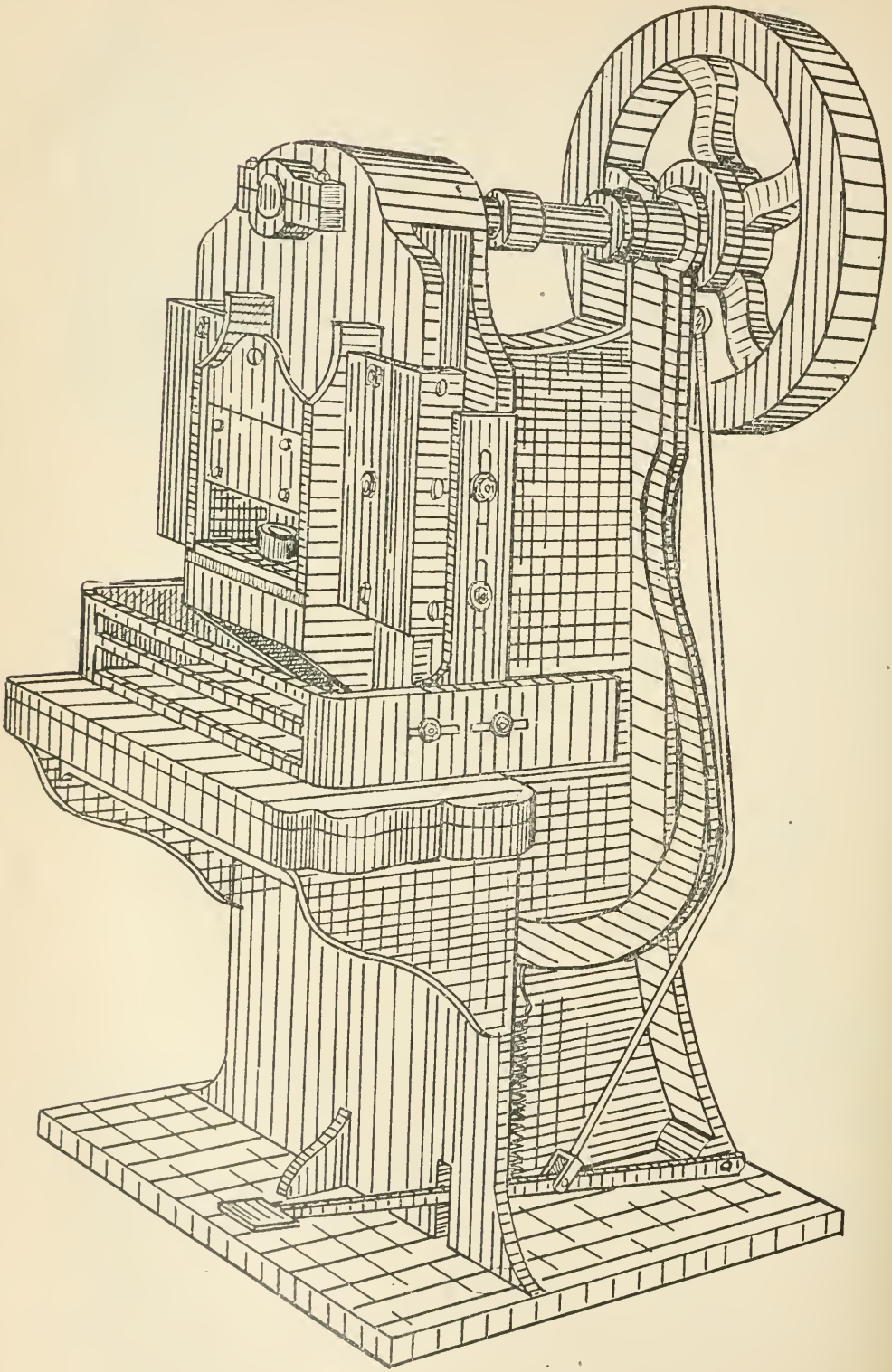


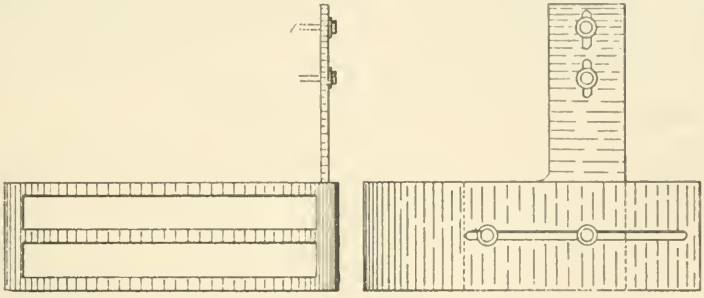
FIG. 25. Stamping Machine with Guard Attached.

DROP PRESS AND STAMPING MACHINE GUARDS.

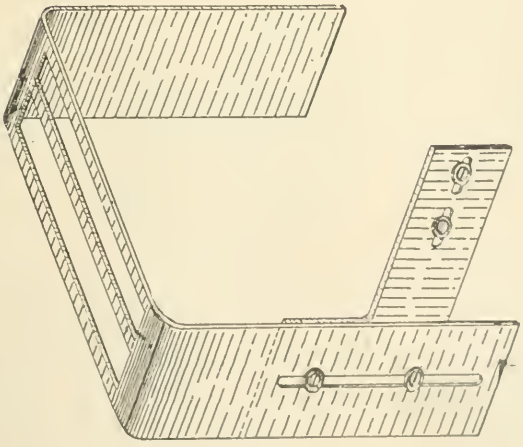
Figs. 25, 25 (*a*), 25 (*b*), and 25 (*c*) show devices for protecting drop presses and stamping machines. It is well known that these machines have been the direct cause for a large number of short fingers. The inventor of the device shown in Fig. 25 is Mr. John D. Long, Superintendent of the Tin Manufacturing Company, of Messrs. Guiana, New York City. Mr. Long claims that, with very slight modification, it can be applied to nearly every tin and sheet metal stamping press now in use. And since its adoption by the above firm there has not been a single accident.

Fig. 25 (*b*) shows a press guarded so that when the stamp comes down the protecting device works automatically, catching the workman's hand and raising it up away from the die, as shown on the right.

Fig. 25 (*c*) shows a press safeguarded automatically, the press being operated by two handles. With the hands thus occupied, the operator cannot get crushed.



Front View. Side View of Guard.



Isometrical View of Guard.

FIG. 25(*a*). Guard for Presses and Stamping Machines.

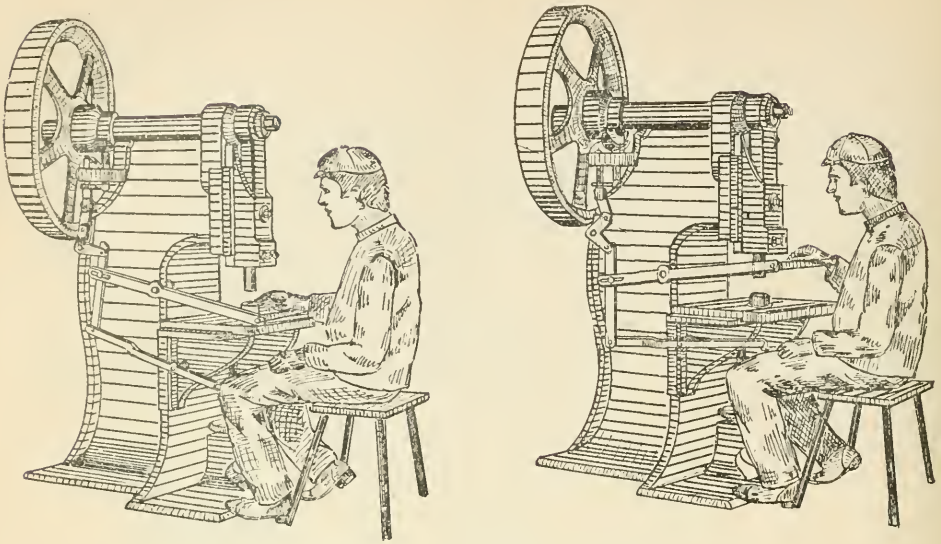


FIG. 25(*b*). A Press Safe Guarded.

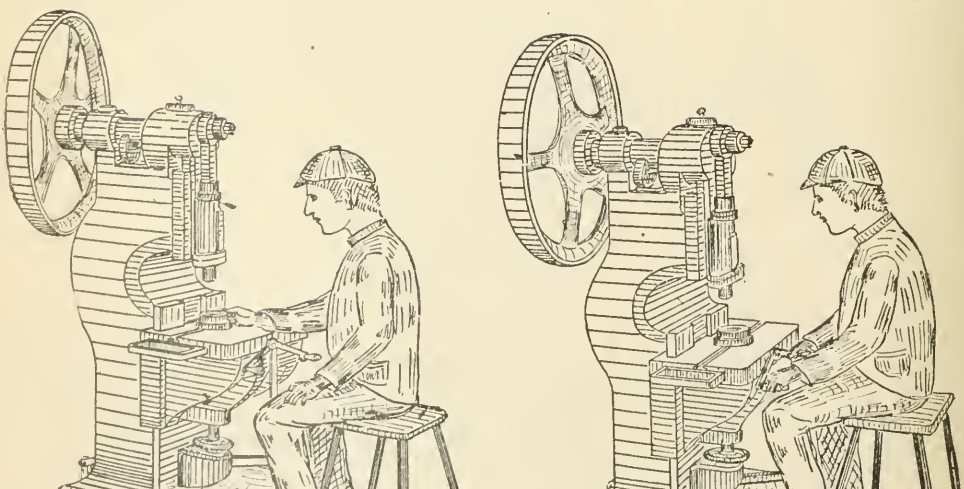


FIG. 25(*c*). Press Safe Guarded.

SET SCREWS AND SHAFTING.

Figs. 26, 26 (*a*), 26 (*b*), and 26 (*c*) show different kinds of set screws. The hollow pattern commends itself as being easily adapted to old work.

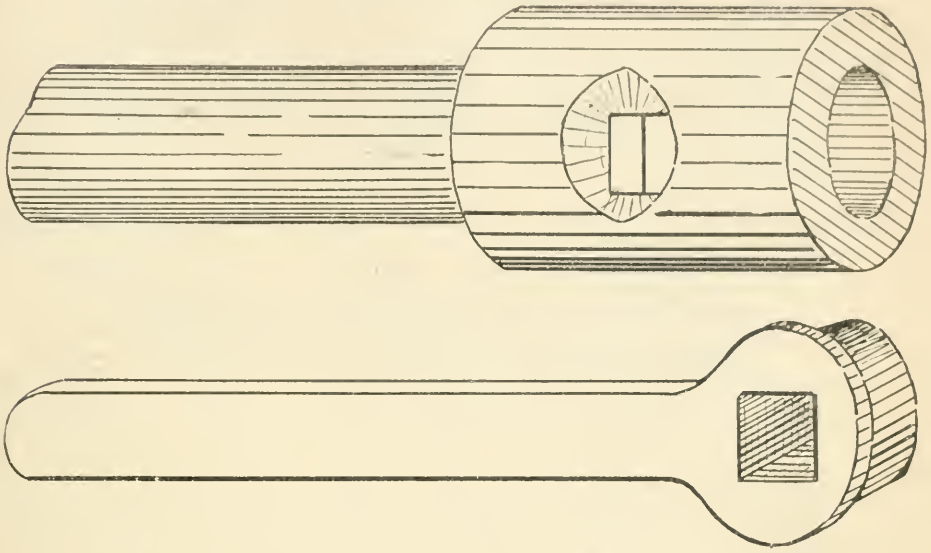


Fig. 26. Set Screw Countersunk.

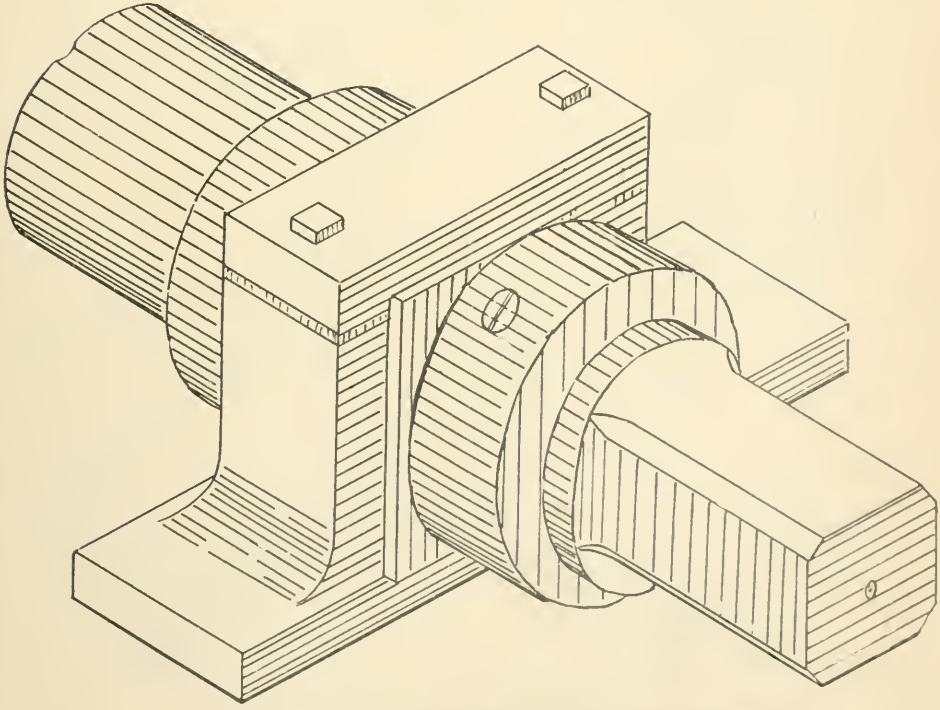


Fig. 26(*a*). Countersunk Set Screw and Unprotected Shaft End.

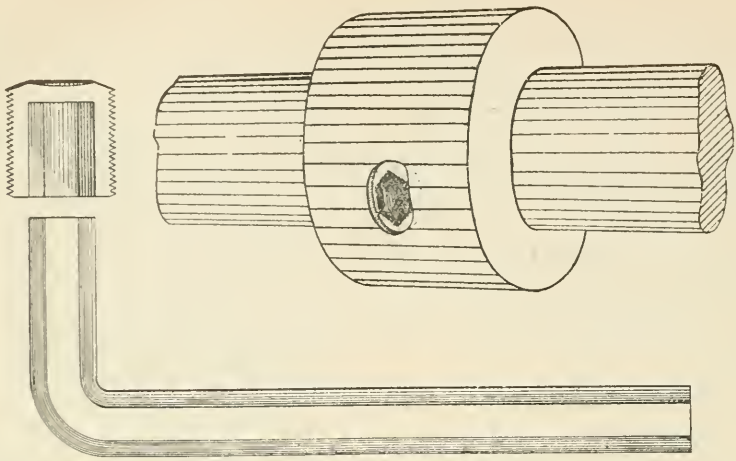


FIG. 26(*b*). Safety Set Screw.

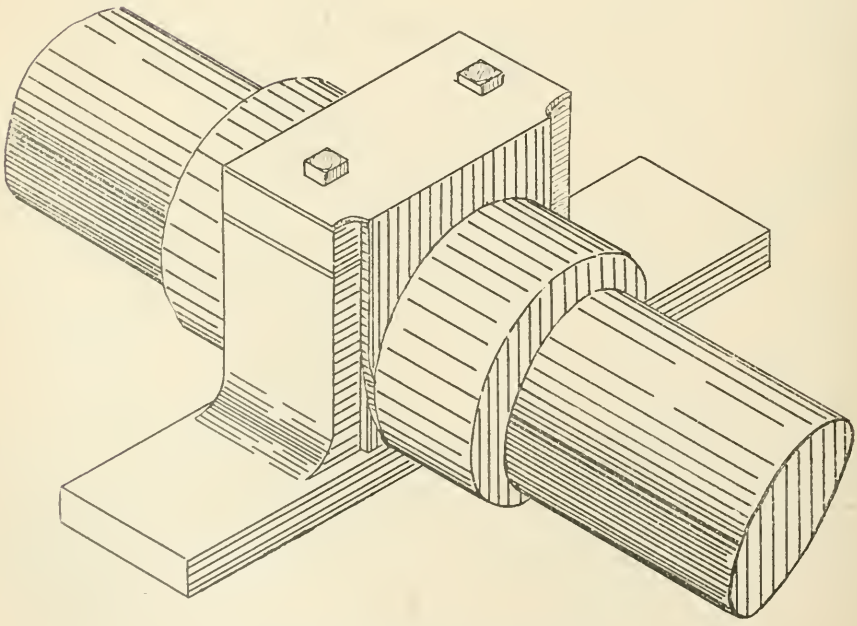


FIG. 26(*c*). Shaft End Protected.

Fig. 27 shows imperfect set screws and shafting.

Figs. 28, 28 (*a*), 29, 29 (*a*), 30, and 30 (*a*) show different forms of covering for pinion gears. Figs. 29 and 29 (*a*) show an imperfect form. Fig. 30 shows a partial covering for gears that revolve one way only. This form is applied only where a complete covering is not practicable.

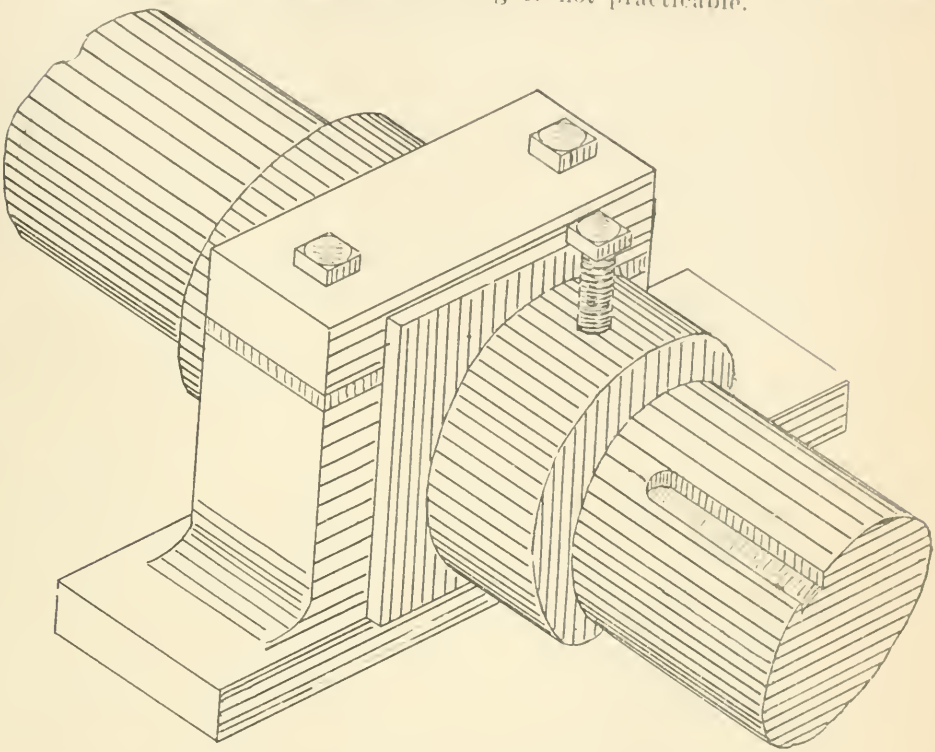


Fig. 27. Showing a protruding Set-Screw and Key-way.

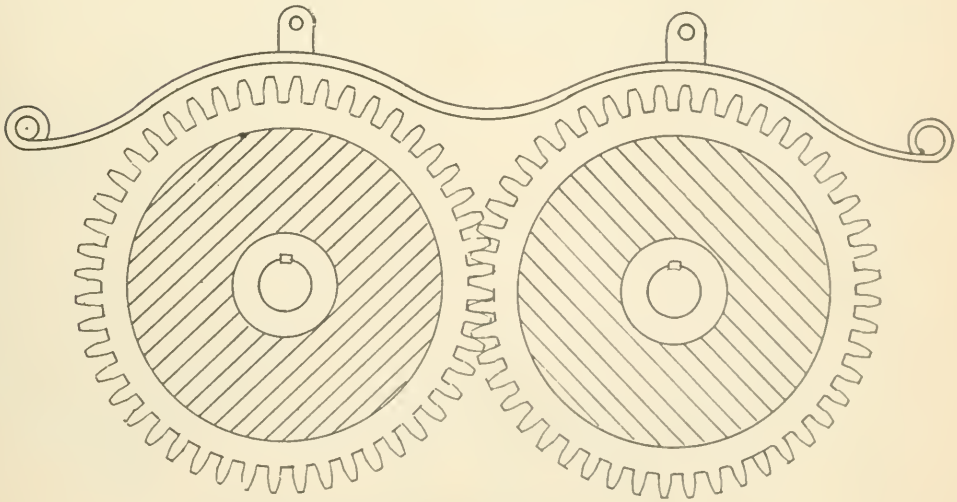


Fig. 28. Imperfect Guard for Spur Gear Wheels.

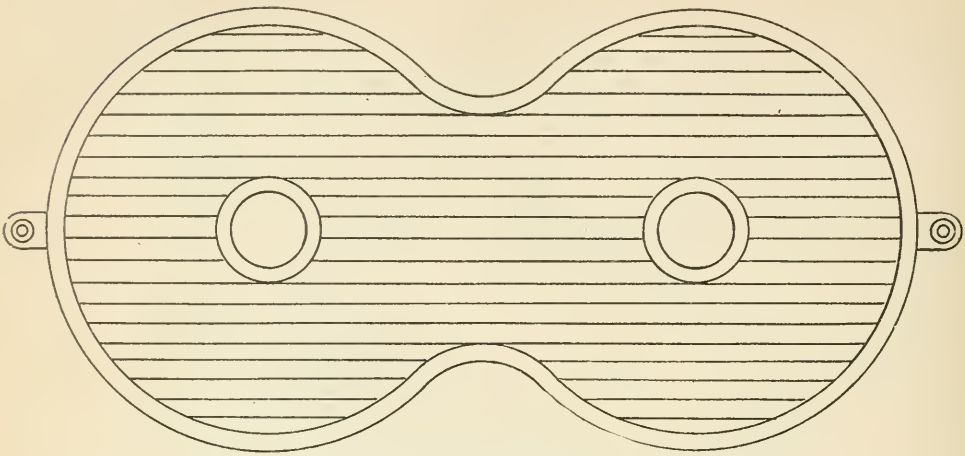


Fig 28 (*a*). Showing a Complete Guard on Spur Gear Wheels.

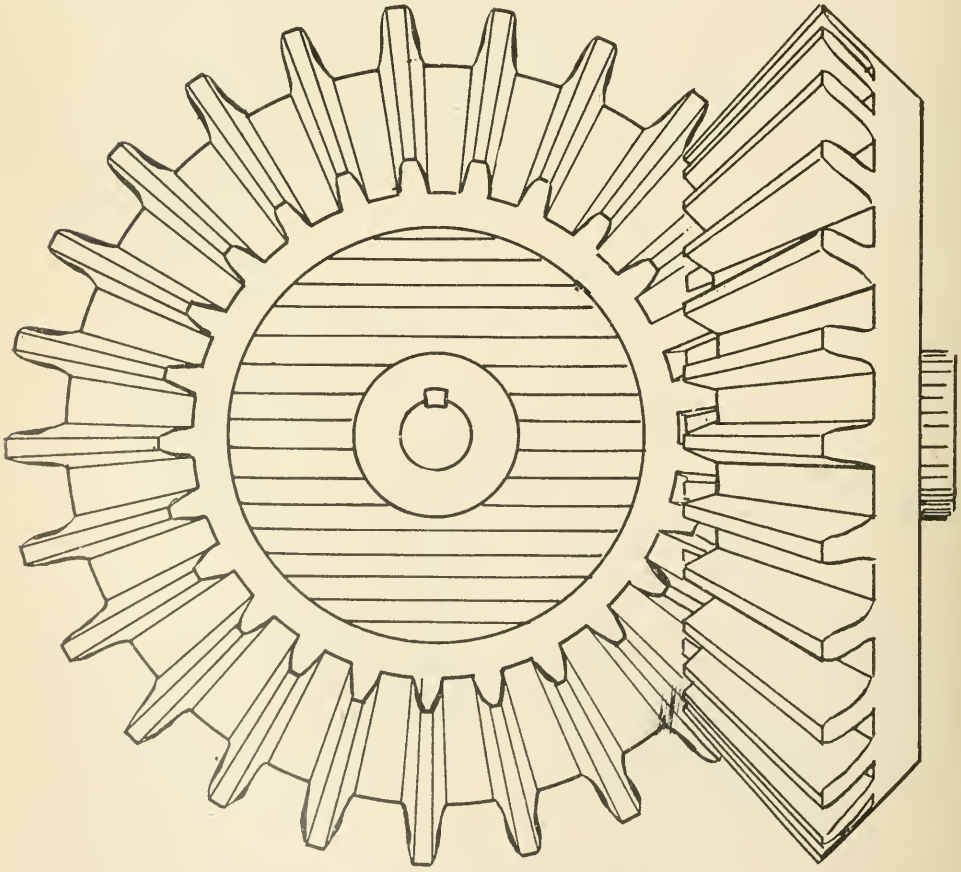


Fig. 29. Exposed Bevel Gear Wheels.

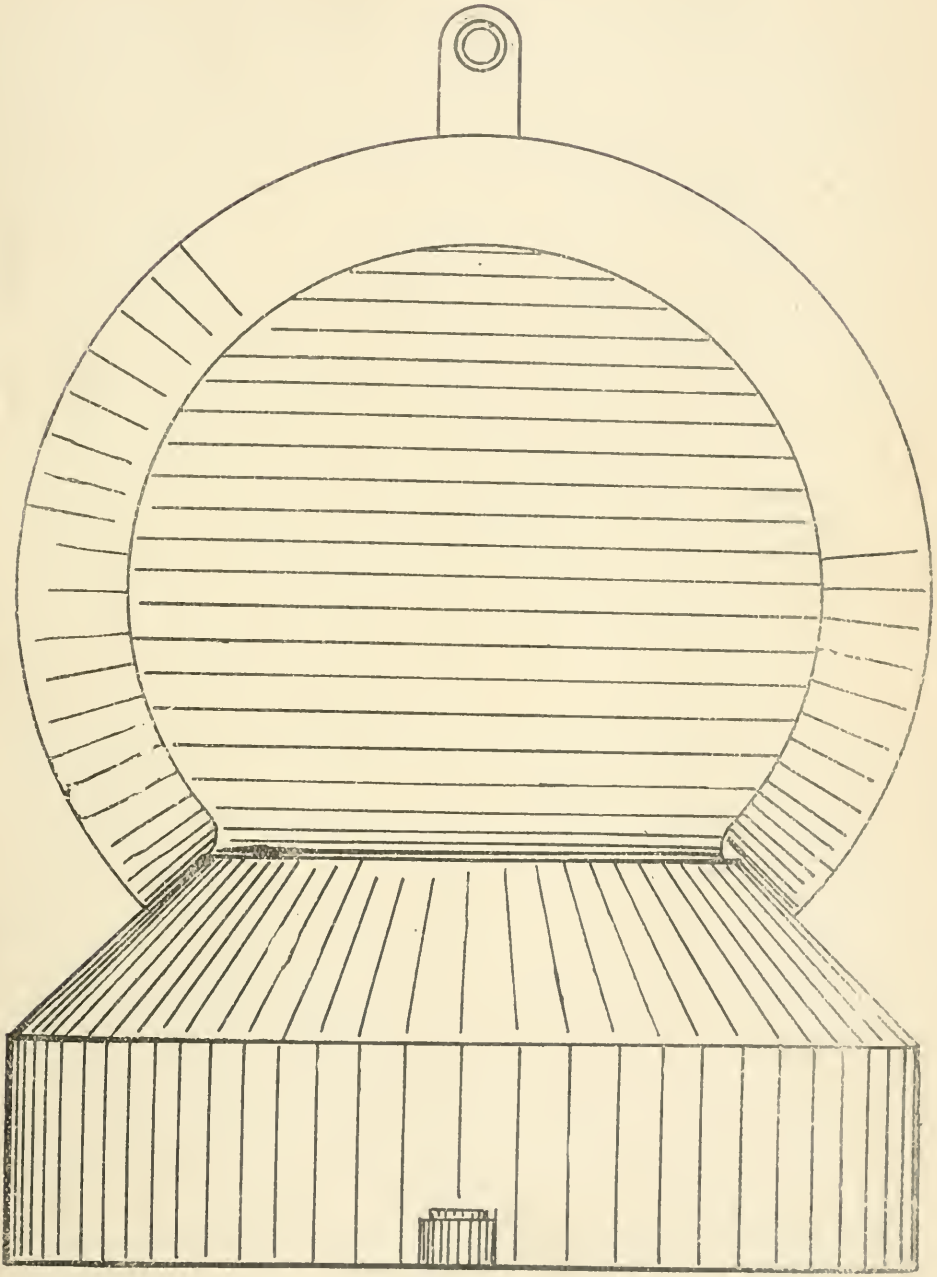


Fig. 29 (a). Covered Bevel Gears.

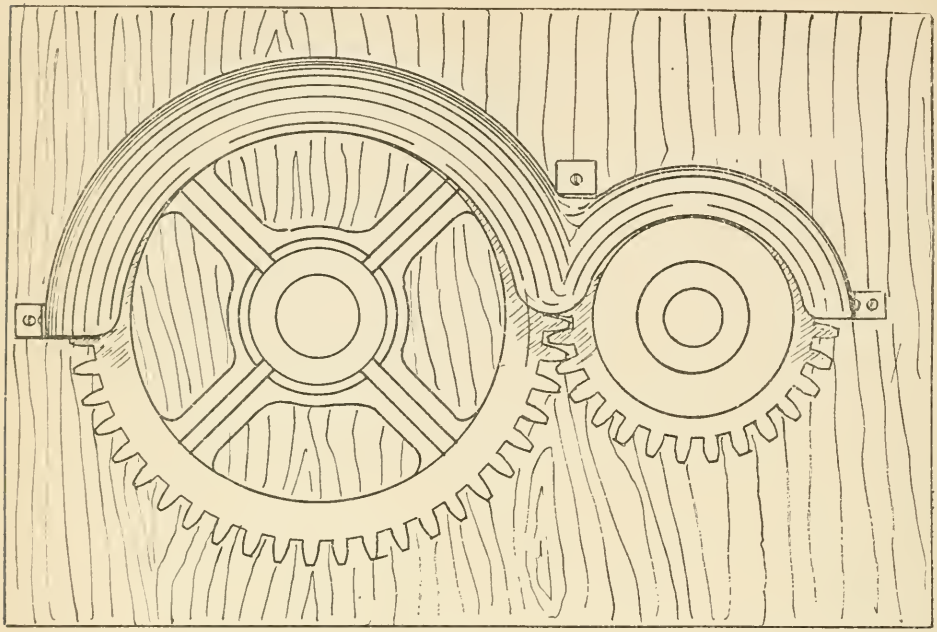


Fig. 30 (*a*). Guard for Gea .

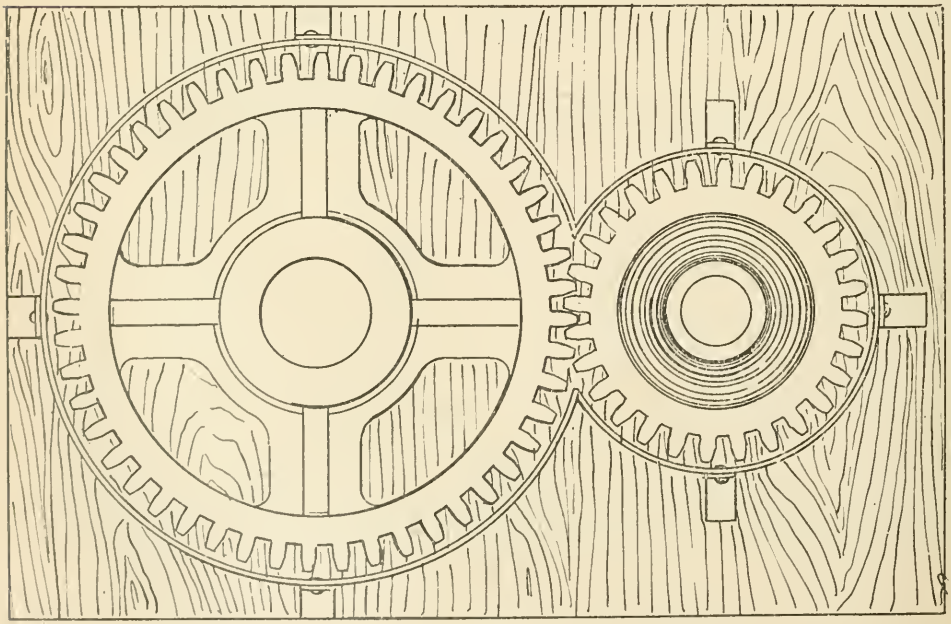


Fig. 30. Gear Protectors.

KNIFE GUARDS.

Fig. 31 shows a simple knife guard, which by slight alterations can be applied to almost any kind of a knife, such as knives used for paper, tobacco, metal, veneer, etc.

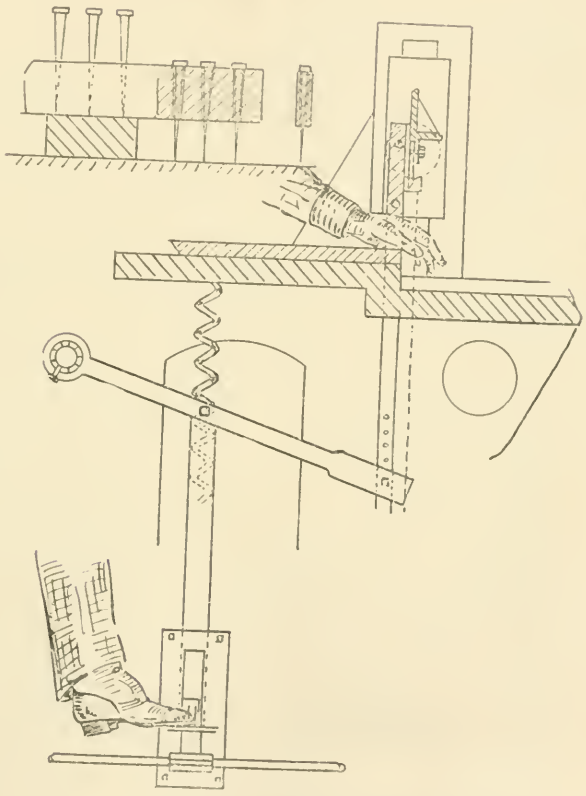


Fig. 31. The Perfect Knife Guard.

BALCONY FOR CLEANING WINDOWS.

Fig 32 is that of a safety balcony, for the cleaning or adjusting of windows from the outside. This device commend itself to any person who owns or occupies buildings two stories or more in heighth. As it not only protects those whose duties it might be to clean or adjust windows against accident from falling to the ground or pavement below, but also provides for a better quality of work. Being collapsable and sectional in its construction, it is easily adjusted to any window, as well as being strong and rigid when in place.

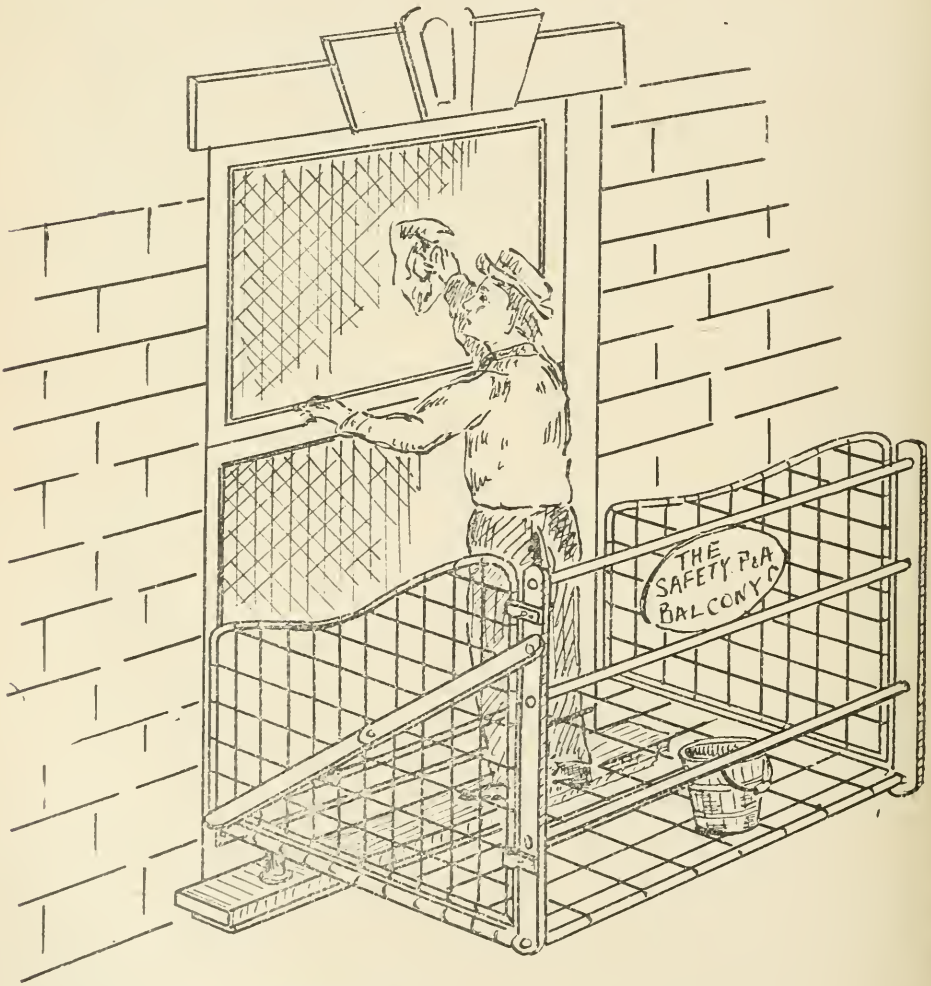


Fig. 32. Adjustable Balcony for Outside Window Cleaning.

BAKE SHOP MACHINERY.

Figs. 33, 34, and 35 show certain protection necessary for the safety of dough brakes and mixers. Fig. 33 shows a dough brake with a single fly wheel and complete covering to protect rolls; also scraper knives to clean rolls, making it unnecessary to use the hands for this purpose. It is provided with belt shifter within easy reach of the operator at all points; the gears are also covered. Fig. 34 is the same machine built larger and with two fly wheels.

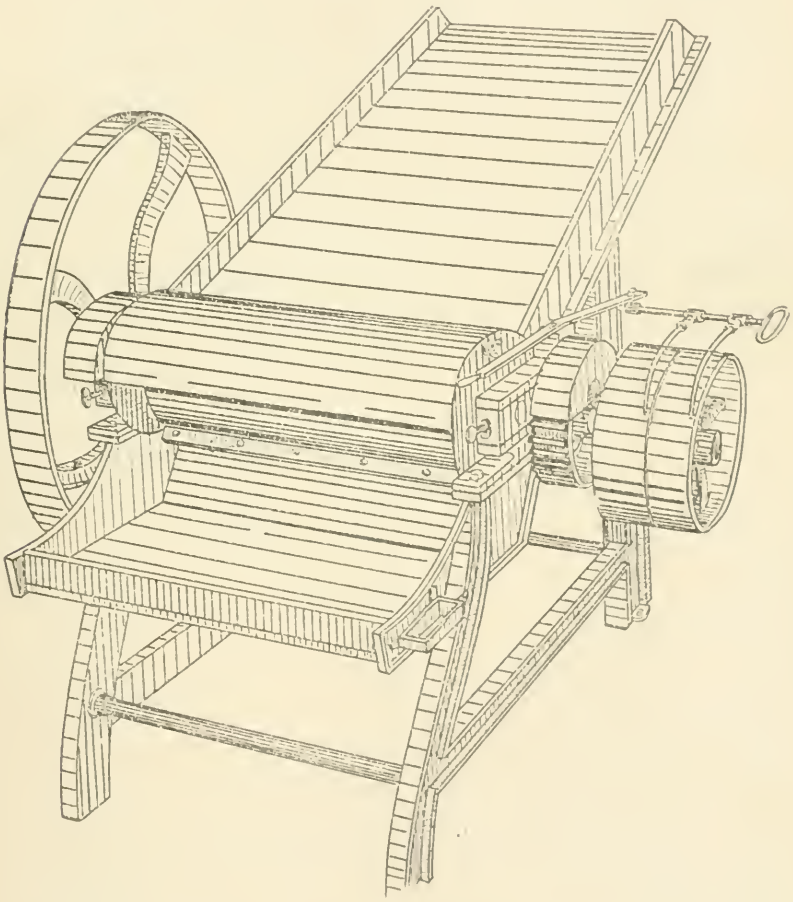


Fig. 33. Single Fly-wheel Dough Brake.

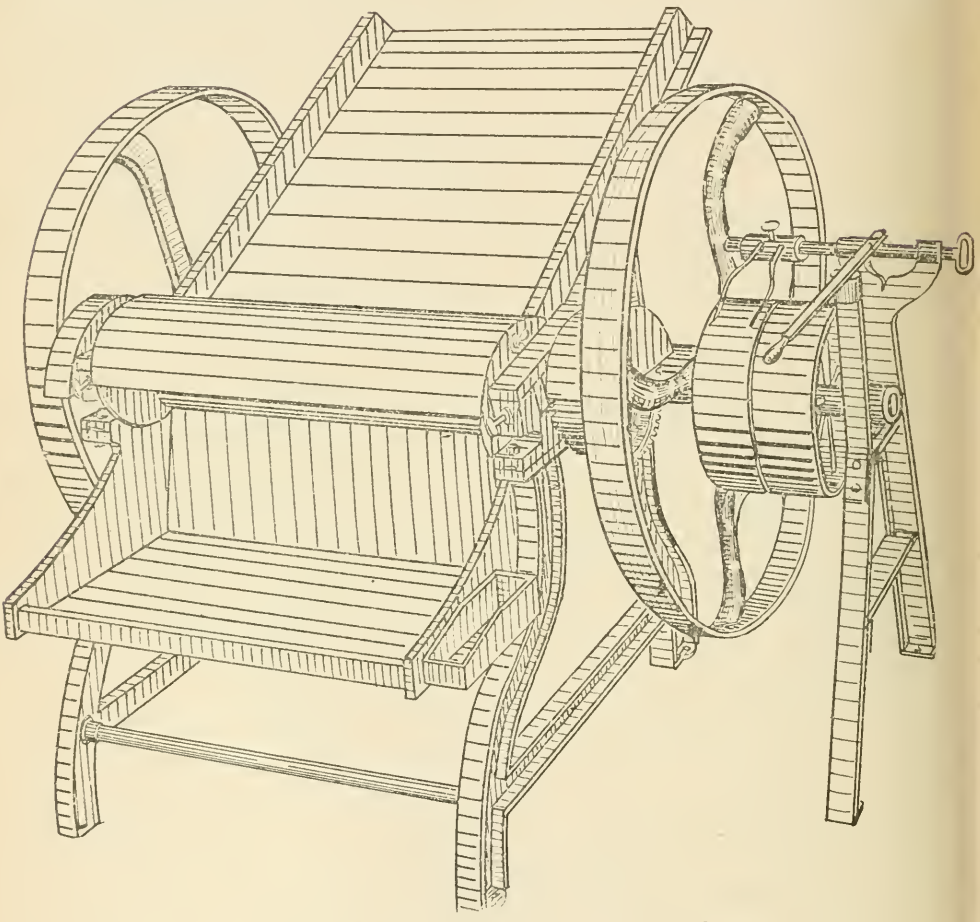


Fig. 34. Double Fly-wheel Dough Brake.

Fig. 35 is that of a dough mixer, and many very serious accidents are recorded against this machine; in nearly every case the cause originated with the belt shifter. It is therefore important that the motive power or belt shifter should at all points be within reach of the operator when cleaning the machine or doing any other work incidental to its operation.

There are many other machines, such as candy mixers, agitators, moulders, etc., all of which should be considered with this class of machinery, and made safe as far as practicable.

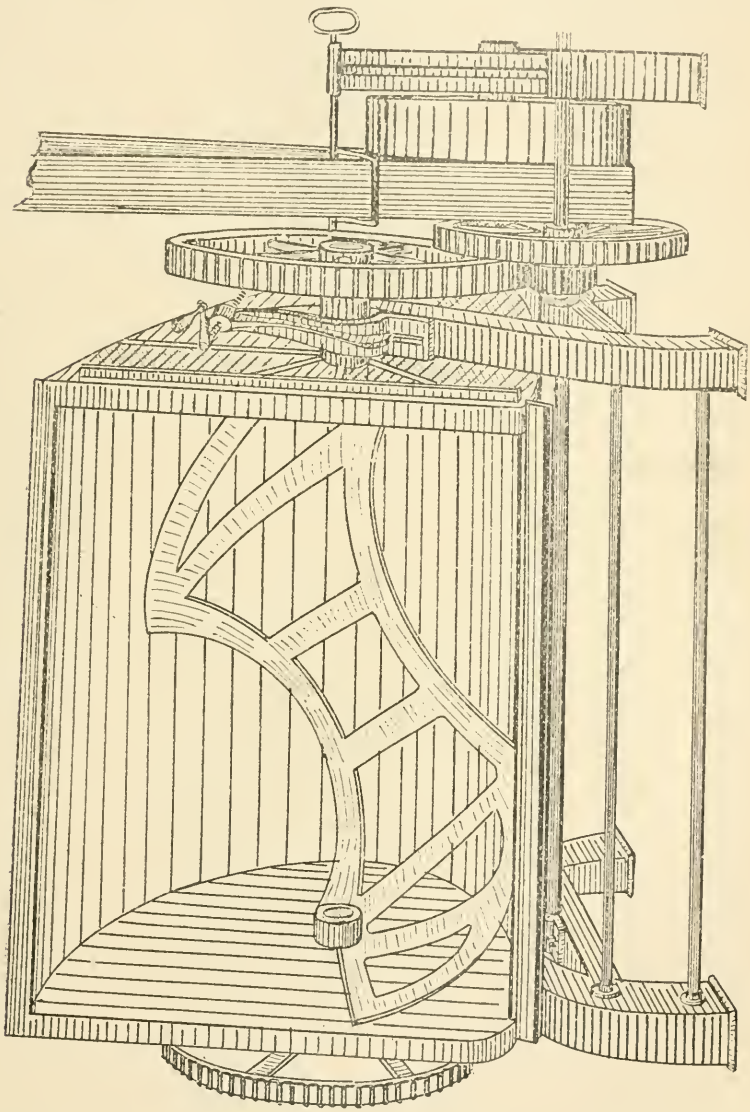


Fig. 35. Universal Dough Mixer.

SAW MILL MACHINERY.

Fig. 36 shows a guard for an ordinary light band saw, such as is used in nearly every wood-working establishment. Band saws used in lumber mills should in all cases be provided with a heavy plank at top, to prevent operators in event of saw breaking. There should also be a strong wire guard, to protect the operators, or setters, who ride the carriages. The accidents that happen in this way are in most cases very serious or fatal. Hence the need for special protection. This latter suggestion applies in all mills where band or circular saws are used.

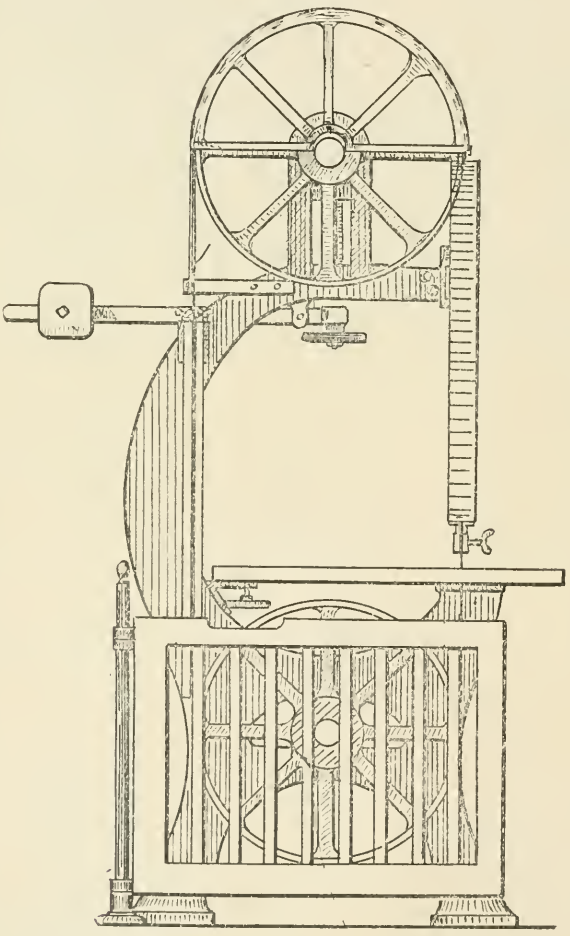


Fig. 36. Band Saw Guard, Top and Bottom.

EDGERS.

Figs. 37, 38, 39, and 40 show four different types of gang edgers. The first three numbers are much of the same type, and used for the same purpose. Except as to their feed appliances, they might be classed as the same machine.

It will be seen that the edger shown in Fig. 37 is fed with fluted or corrugated rolls at bottom, with idle press rolls at top. Top rolls are usually connected with a lever extending back to the operator, which can be raised or lowered at will. This system is a fair protection to the operator in event of boards or edgings coming in contact with the saw and flying back, striking the operator. In addition to this, there is usually a board hung down in front of the saws, as an additional precaution, to prevent accidents from this source.

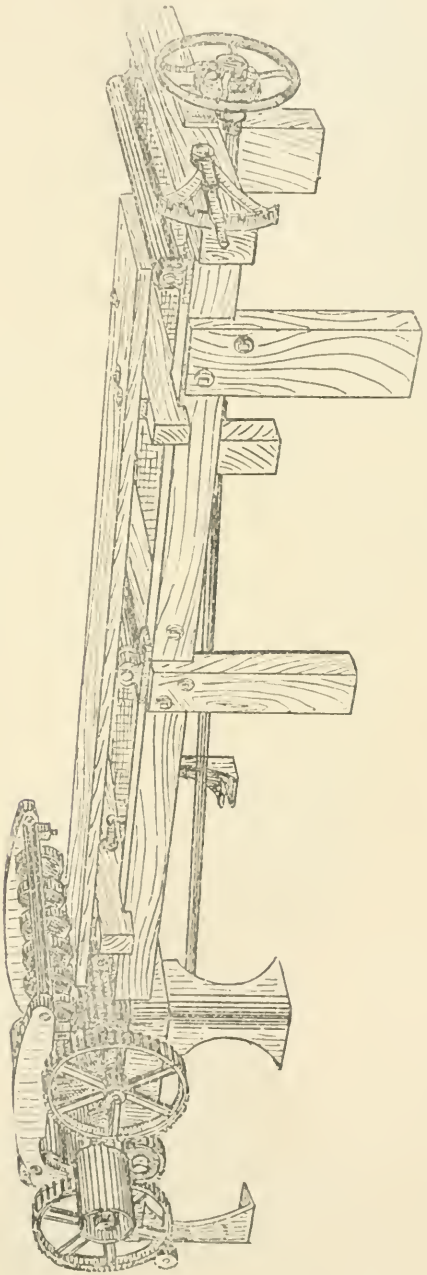


Fig. 37. Double Two Saw Edger. [Since cut was made mandrel has been lengthened and a box and stand supplied for bearing outside of pulley.]

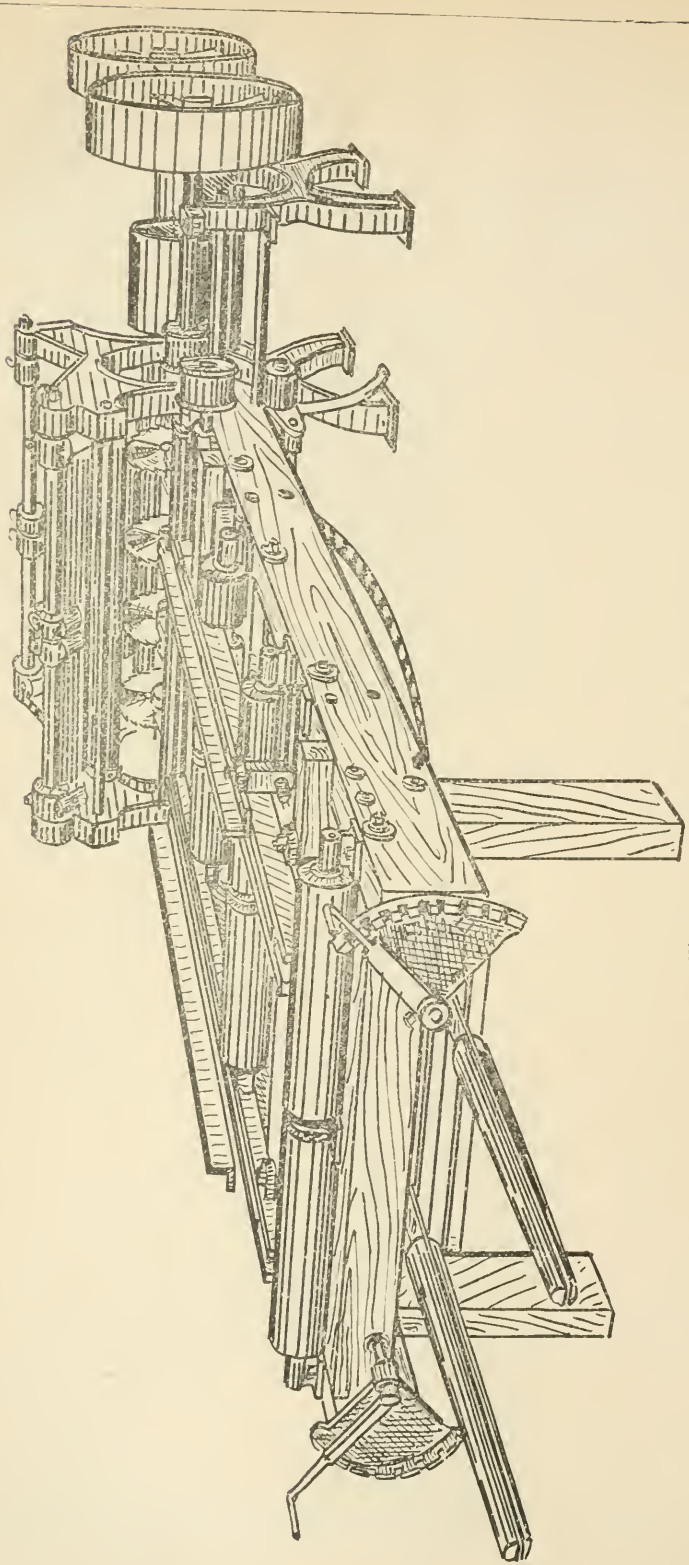


Fig. 38. Garland Gang Edger.

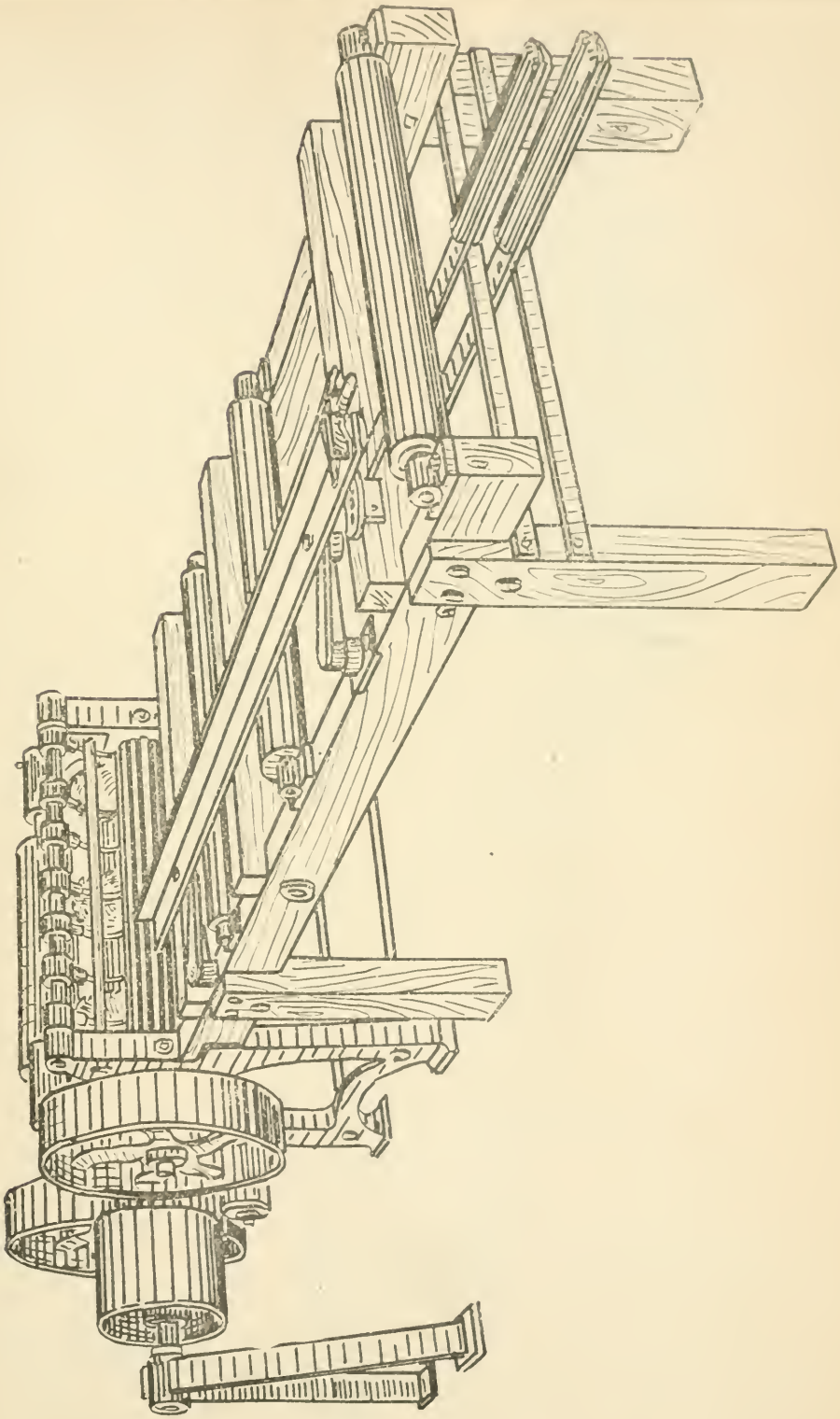


Fig. 39. The Star Edger.

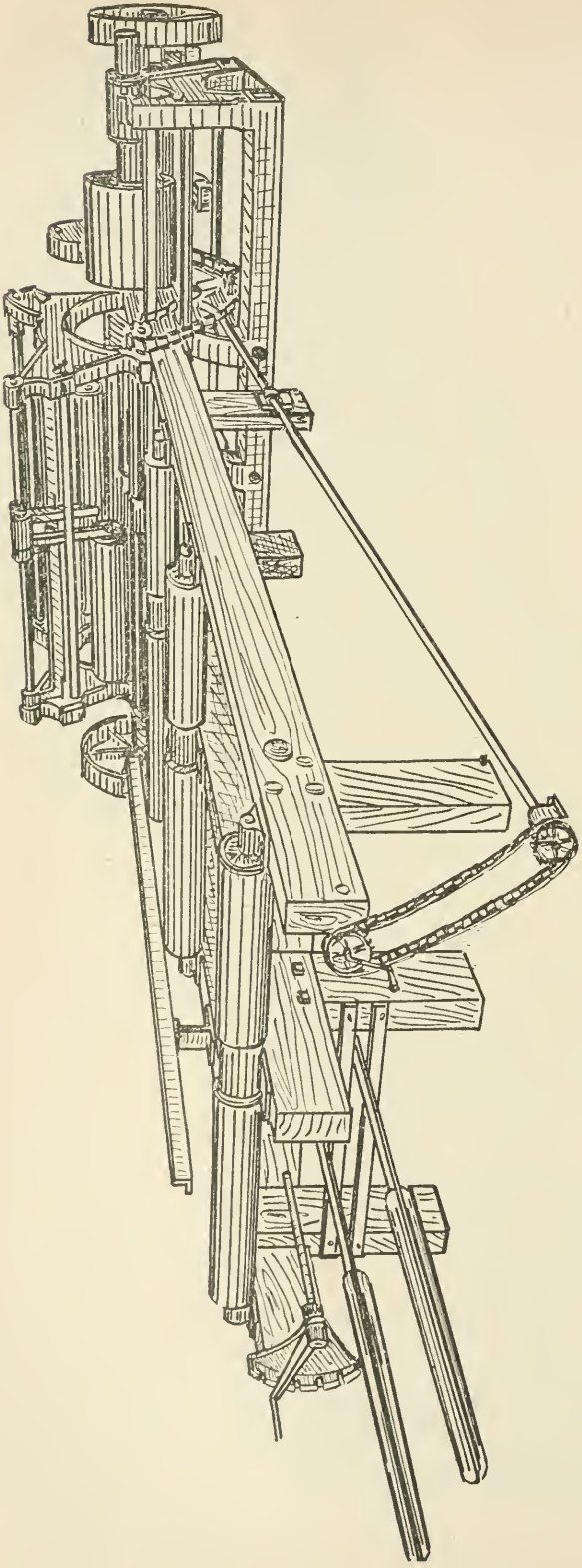


Fig. 40. Combination Gang Edger.

Fig. 38 shows an edger with a chain feed and heavy press rolls in rear, and with swing press rolls in front; operated the same as Fig. 37. There are saws of the type of Fig. 38 operated without a press roll in front, and, as a substitute, have fingers in the rear. This, however, does not provide adequate protection against pieces coming back from the saw.

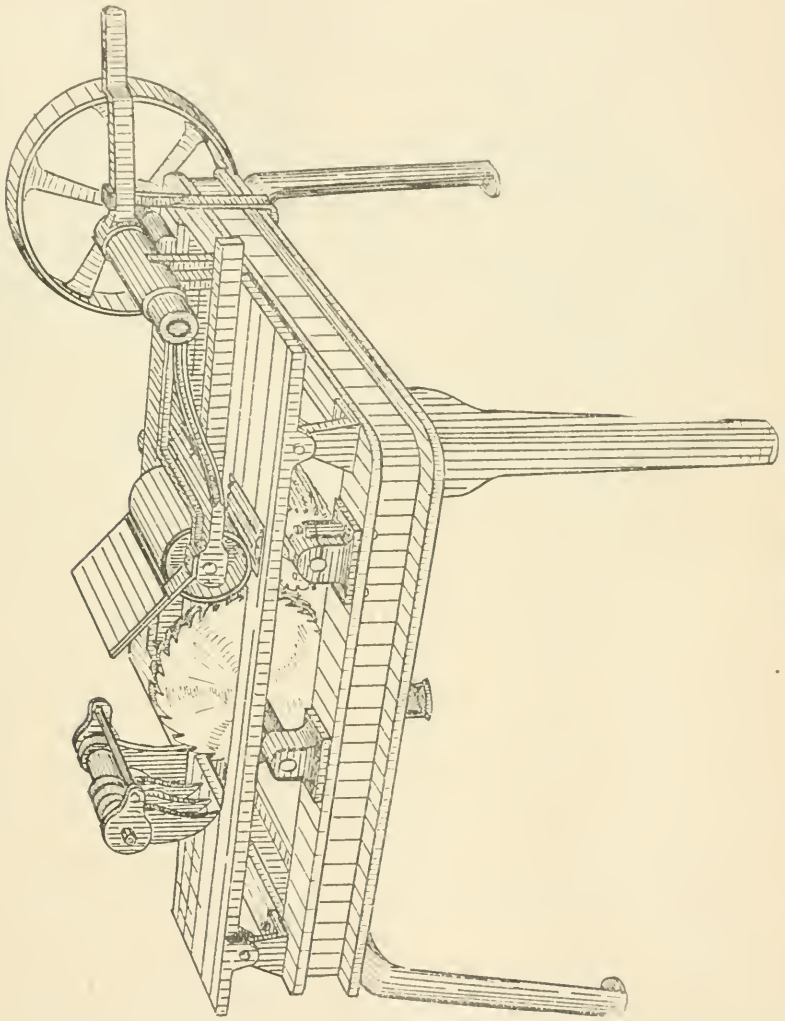


Fig. 41. Lath Bolter.

Fig. 39 is the same type of a machine, with two feed rolls and a heavy press roll in the rear and fingers in the front. Fig. 40 shows a combination gang edger, with flooring attachment. This type of edger is classed among the best from a safety standpoint, having large fluted feed rolls, with heavgy press rolls both front and rear. The press rolls are hung at such an angle as to make their grip certain.

Figs 41 and 42 show a lath bolter and gang lath mill. The protection provided in these two machines is clearly shown.

Fig. 43 shows the style of a shingle jointer most commonly used throughout this Province. To say the least, shingle jointers of any type are classed among the most dangerous machines, and not only require skill in operating them, but should be surrounded with all the protection available. The machine shown in Fig. 43 presents no guard on shingle holder, which consists

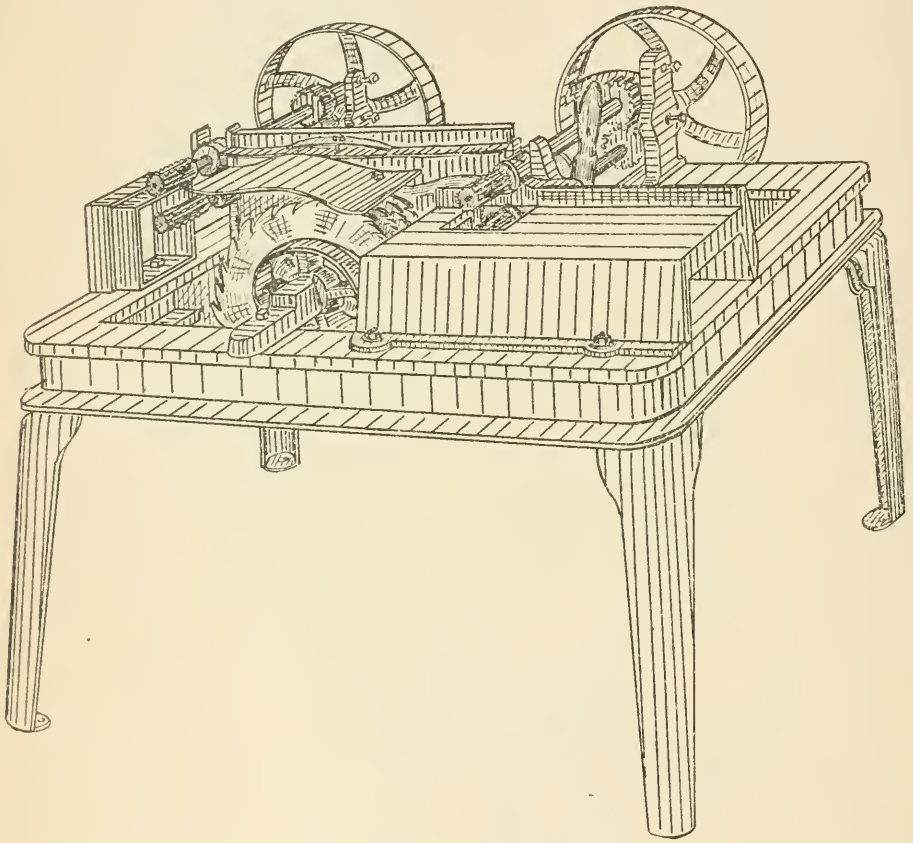


Fig. 42. Gang Lath Mill.

of a $\frac{3}{8}$ rod turned up, drilled and countersunk to receive screws, which fasten it to shingle holder. This guard is fastened to top surface of shingle holder close to saw running full length of holder, leaving sufficient space to permit free access of shingle, but not sufficient to permit fingers with shingle. The guard just described has been adopted by a great many mill owners, and found to be useful means to protect that part of a jointer.

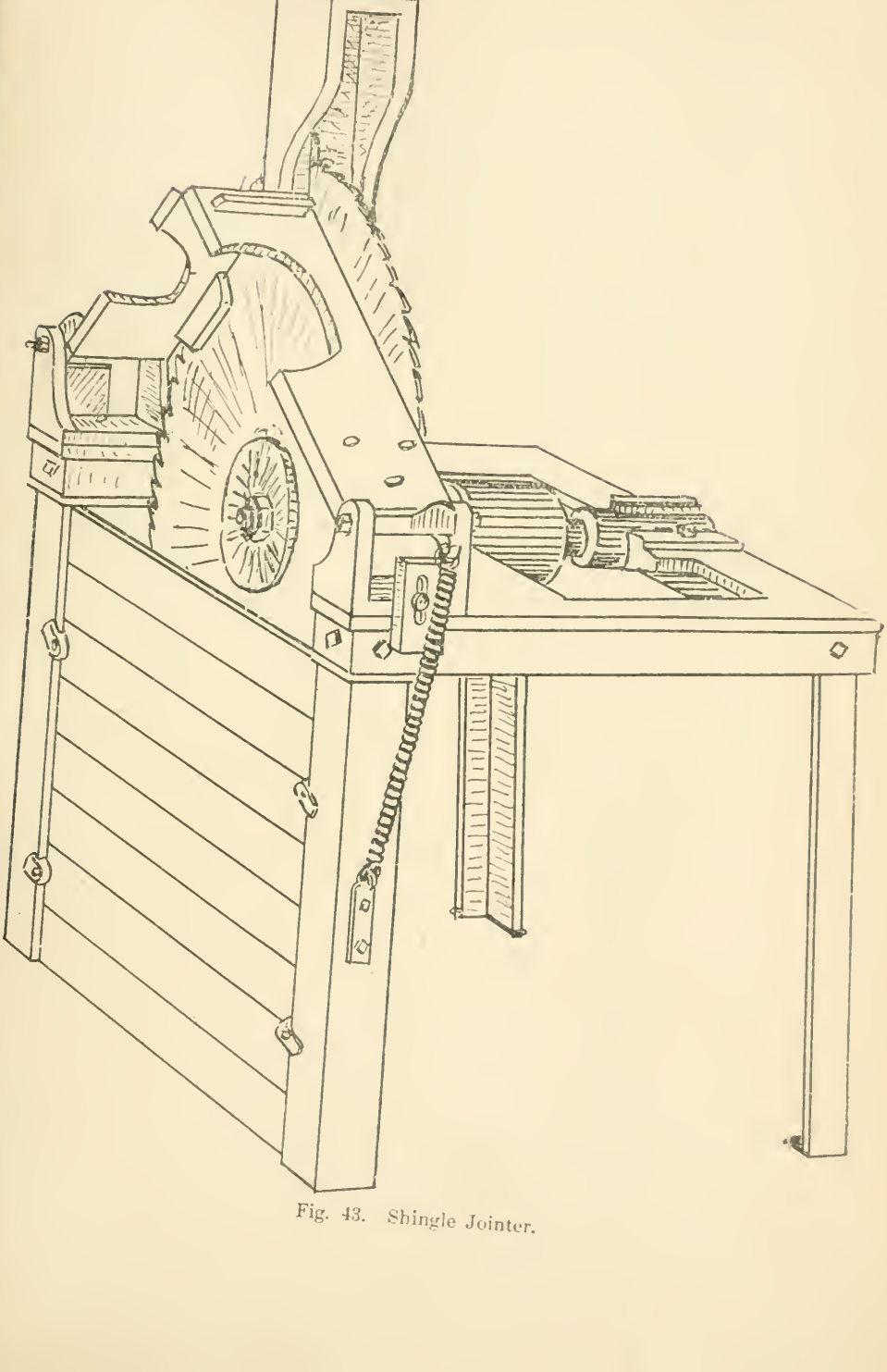


Fig. 43. Shingle Jointer.

Fig. 44 shows another style of a jointer, which is principally used in stave and heading mills. Like the machine just described, it shows no guards, but is simpler and more easily protected.

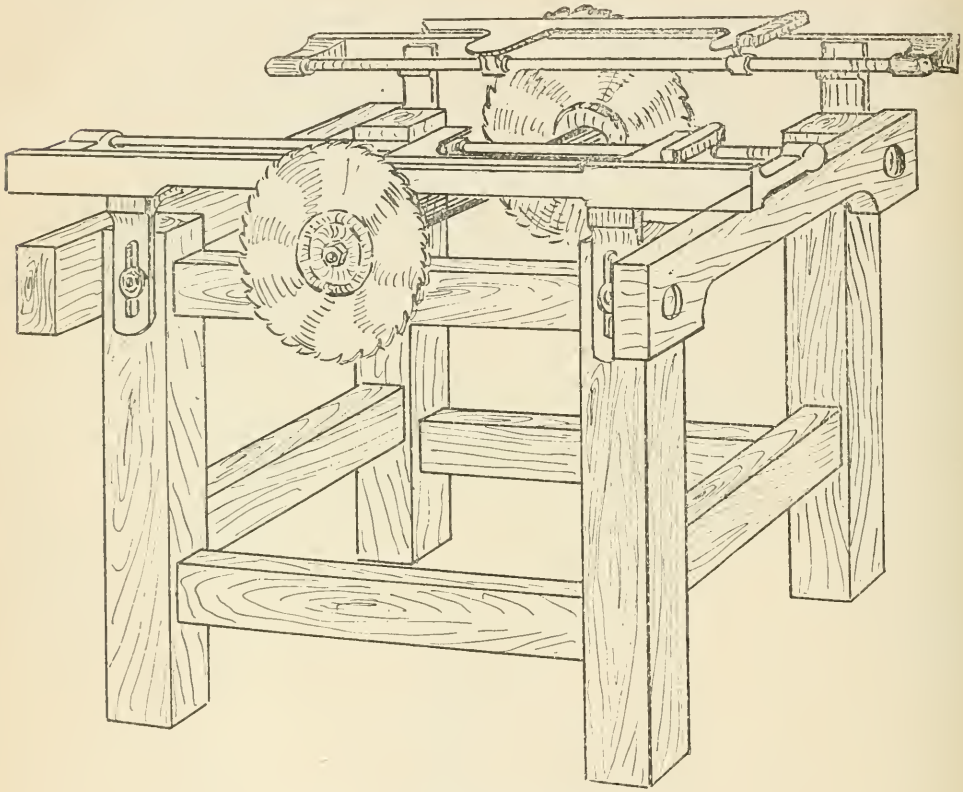


Fig 44. Stave and Shingle Saw Jointer.

ELEVATORS.

Fig. 45 illustrates what is known as the full automatic gates, the gates opening and closing as the car passes each floor, and adapted for low-speed elevators.

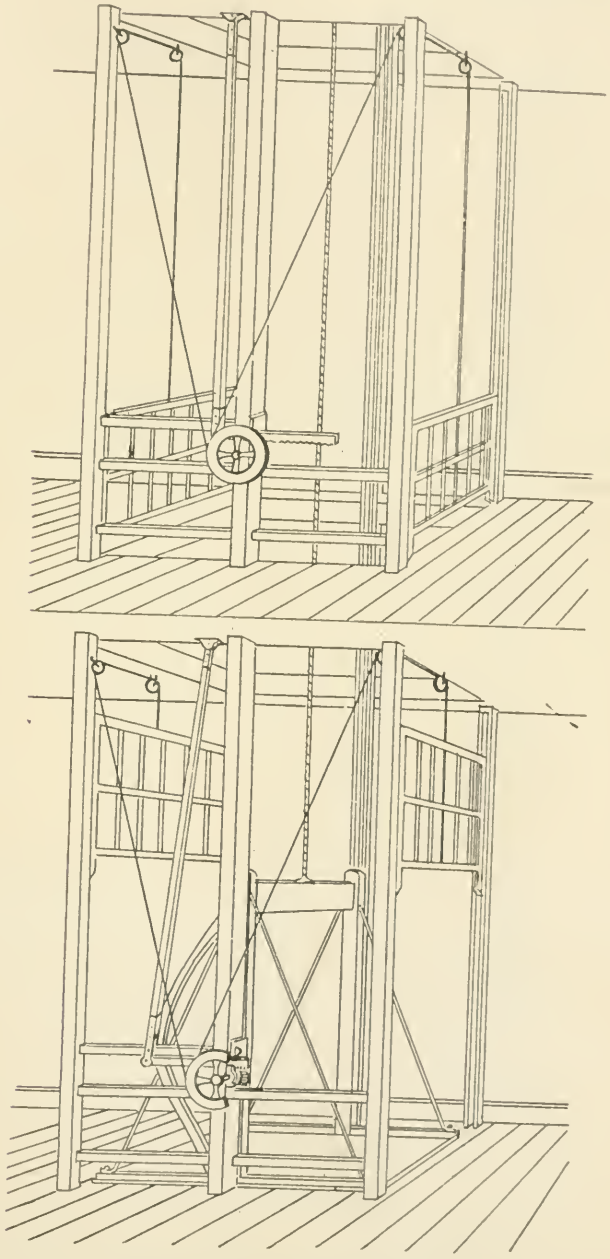


Fig. 45. Full Automatic Gate.

Fig. 45 (*a*) illustrates a full automatic gate, with interlocking attachments. If the car travels a number of floors at a high speed this is well adapted for such service, as in ascending from basement or first floor to the top floor, you do not disturb any of the gates in transit. When you arrive at the floor at which you wish to land you simply push the lever and the gate rises automatically.

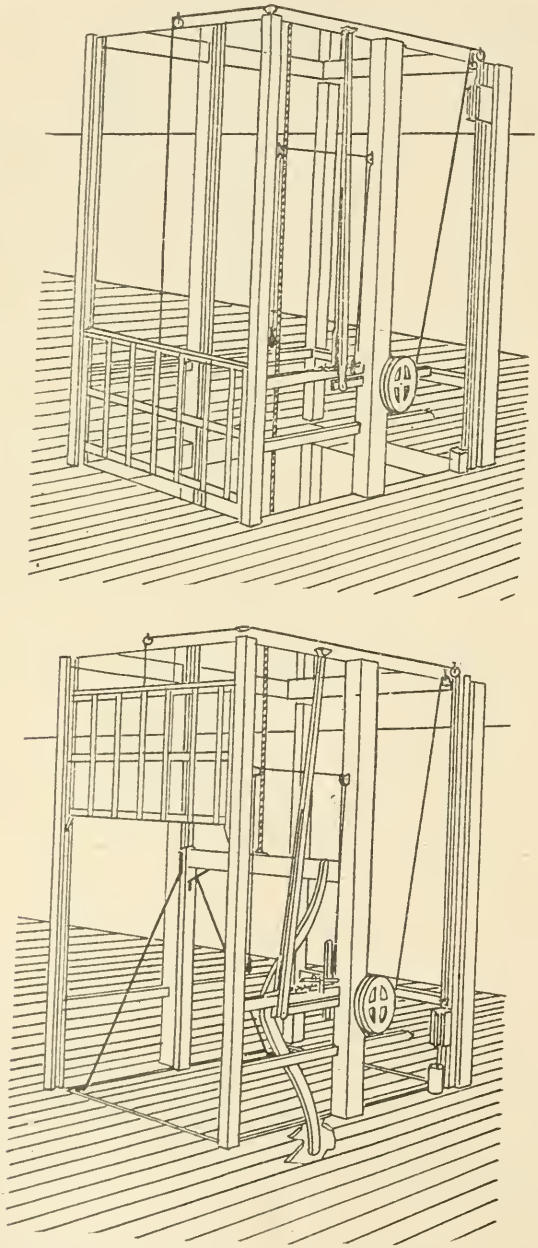


Fig. 45 (*a*). Automatic Gate. Open at will type.

As you leave the floor either ascending or descending, the gate closes itself and locks automatically into position, and is ready for use when you again arrive at the floor.

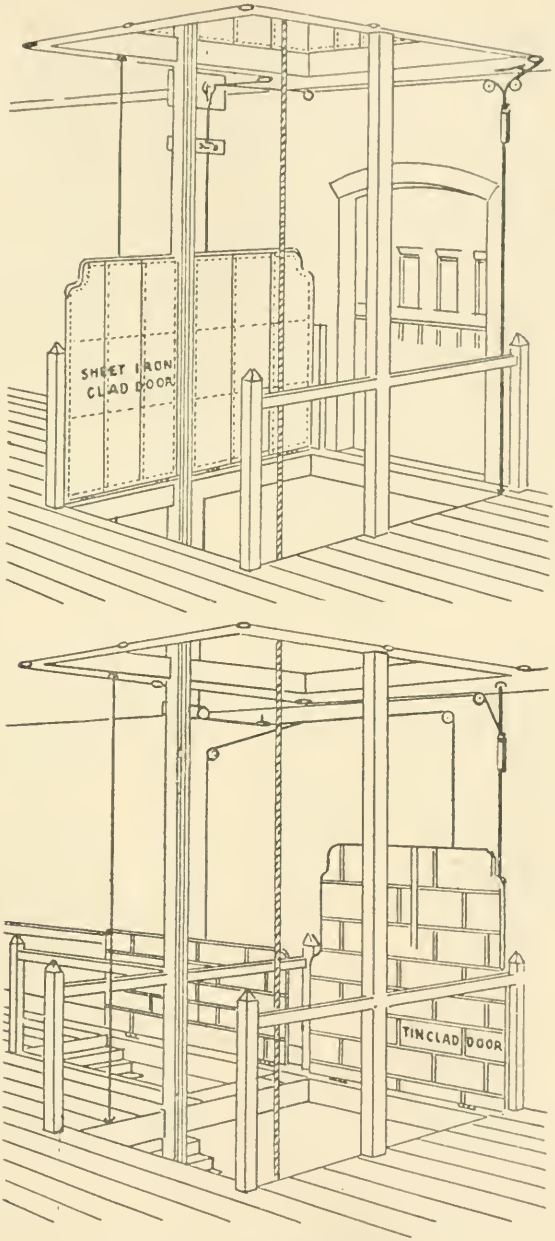


Fig. 45 (*b*). Gravity Fire Doors.

Fig. 45 (*b*) shows a type of gravity fire doors, which are intended for use in hatchways where brick or other fireproof shafts have not been provided. They stand in an upright position, either at the rear or sides of

the shaft, and are arranged to close in case of fire only. They are connected and fastened with fusible thermostats; the fusing of any one will cause the doors on all flats to close automatically and simultaneously. Are also applicable to stairways, light shafts and other floor openings.

Fig. 46 shows another type of elevator lock. This device is usually applied on floor of car.

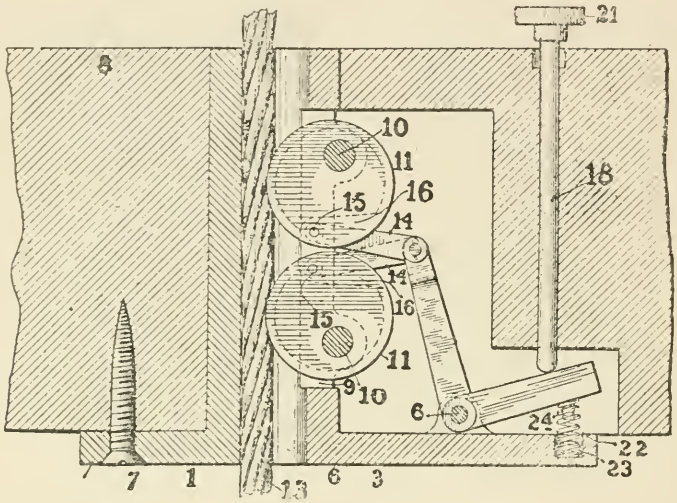


Fig. 46. Elevator Lock.

Figs. 47 and 47 (*a*) show a system of corrugated fireproof doors, open and closed. This system is especially adapted to fireproof towers, and can be fitted with attachable fuse to close in all cases under certain degrees of heat, as well as by the operation of the elevator.

Fig. 48 shows a hatch door system.

Fig. 49 shows a railing or guard to protect hatch doors. Any one of the systems shown here will comply with the requirements of the Factories Act of Ontario, provided they are of the required dimensions and close automatically.

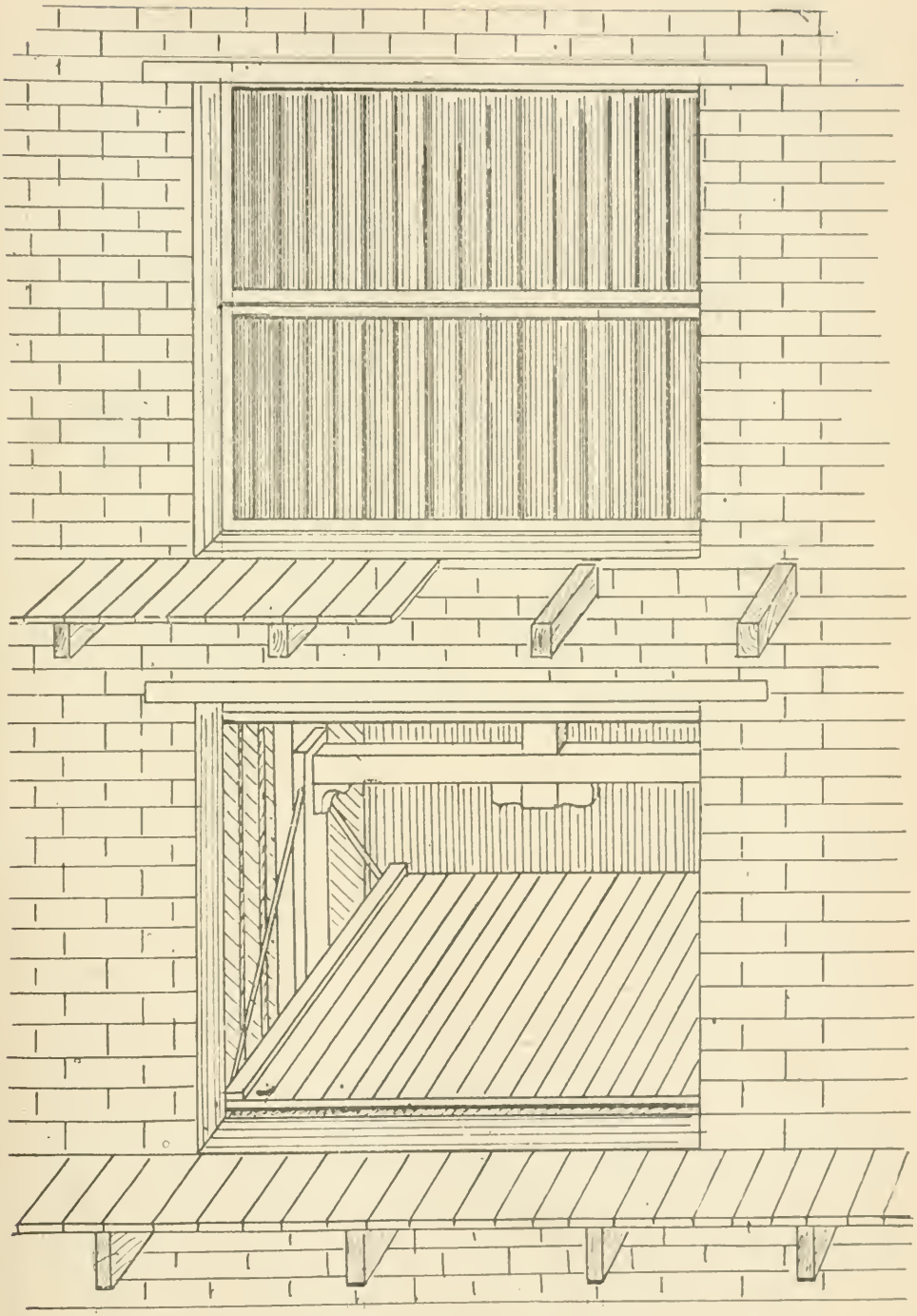


Fig. 47. Corrugated Iron Doors.

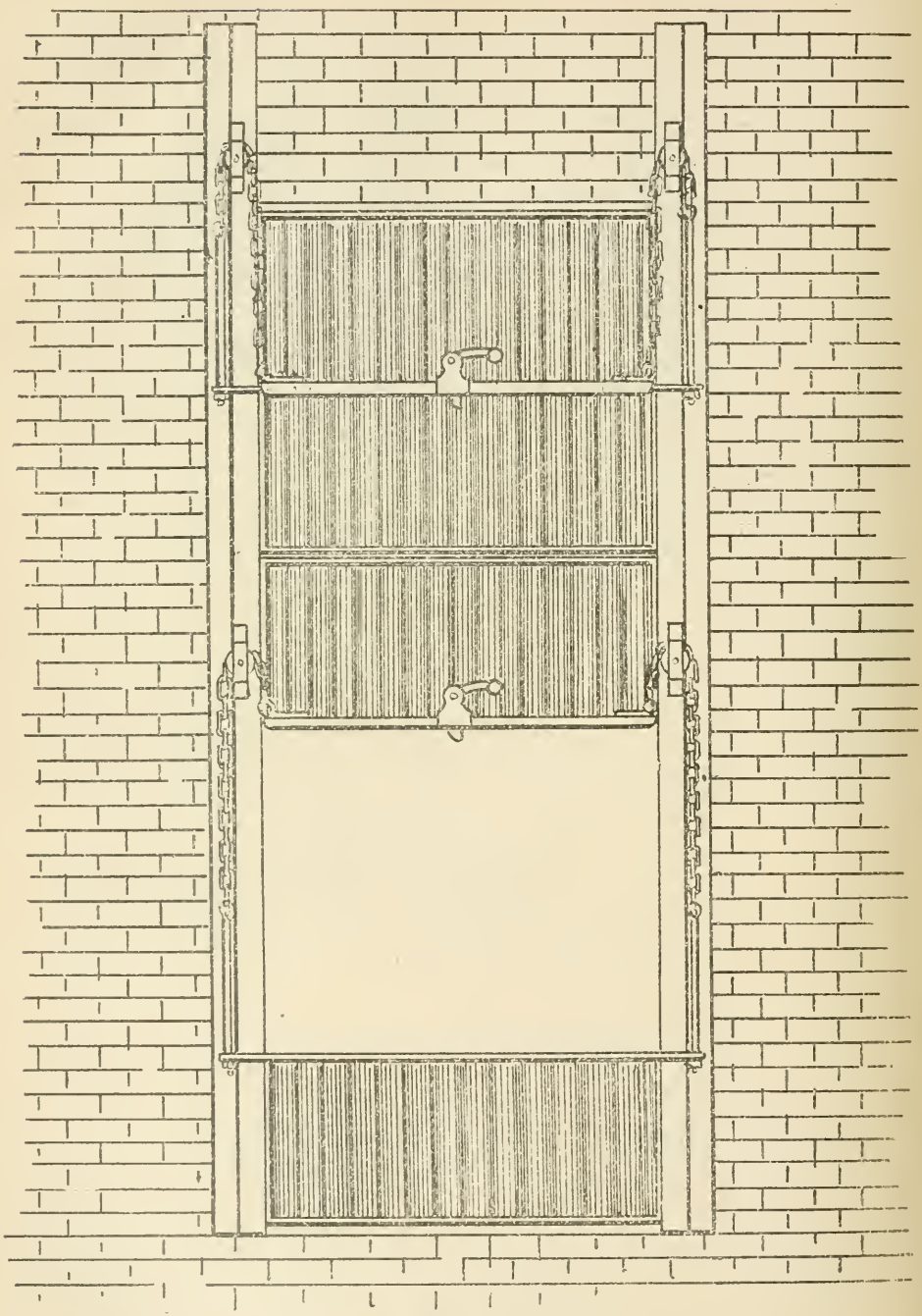


Fig. 47 (*a*). Corrugated Iron Doors.

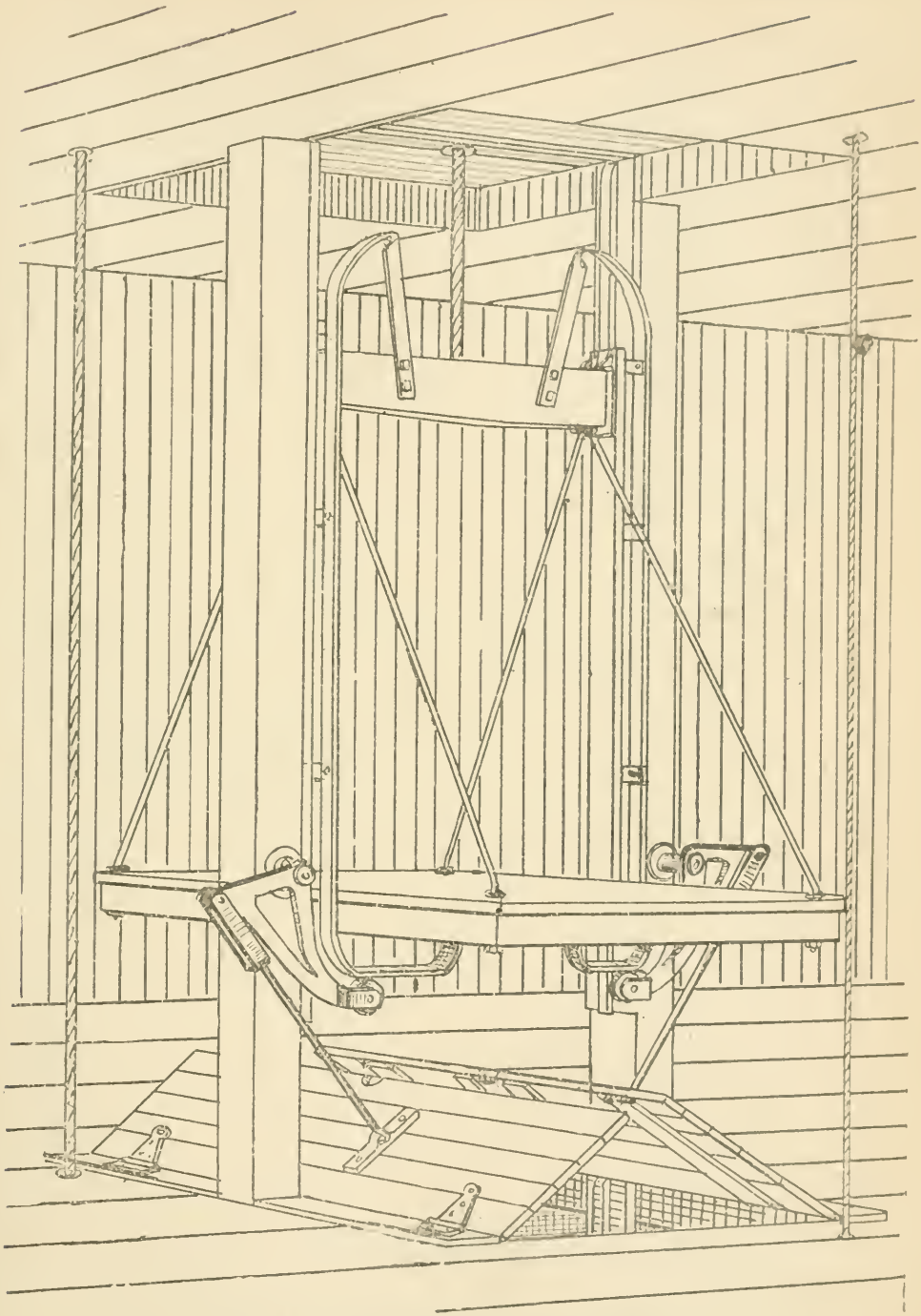


Fig. 48. Automatic Hatch Doors or Covers.

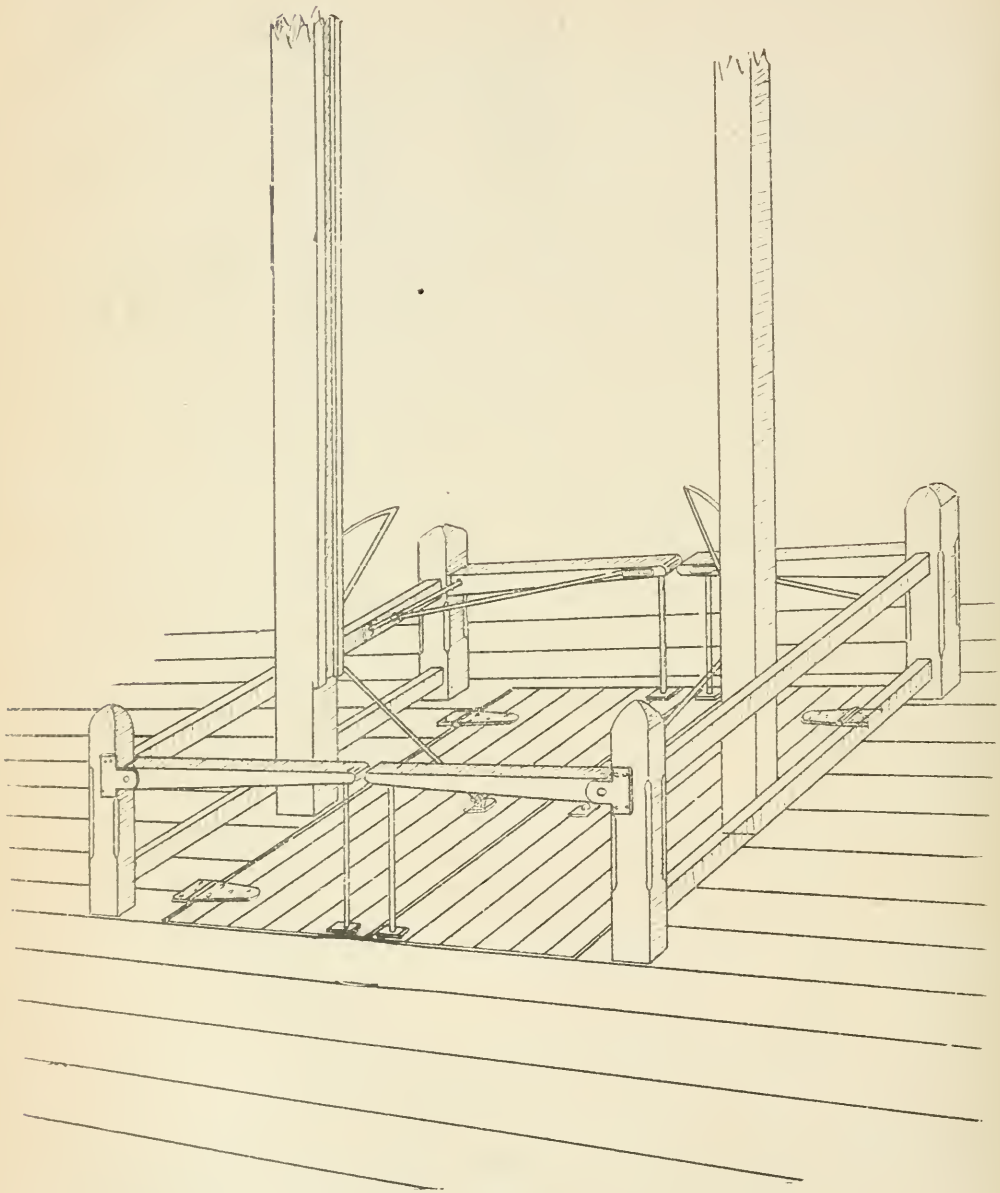


Fig. 49. Guard to Prevent Crossing Over Automatic Hatches.

FIRE-ESCAPES AND SHUTTERS.

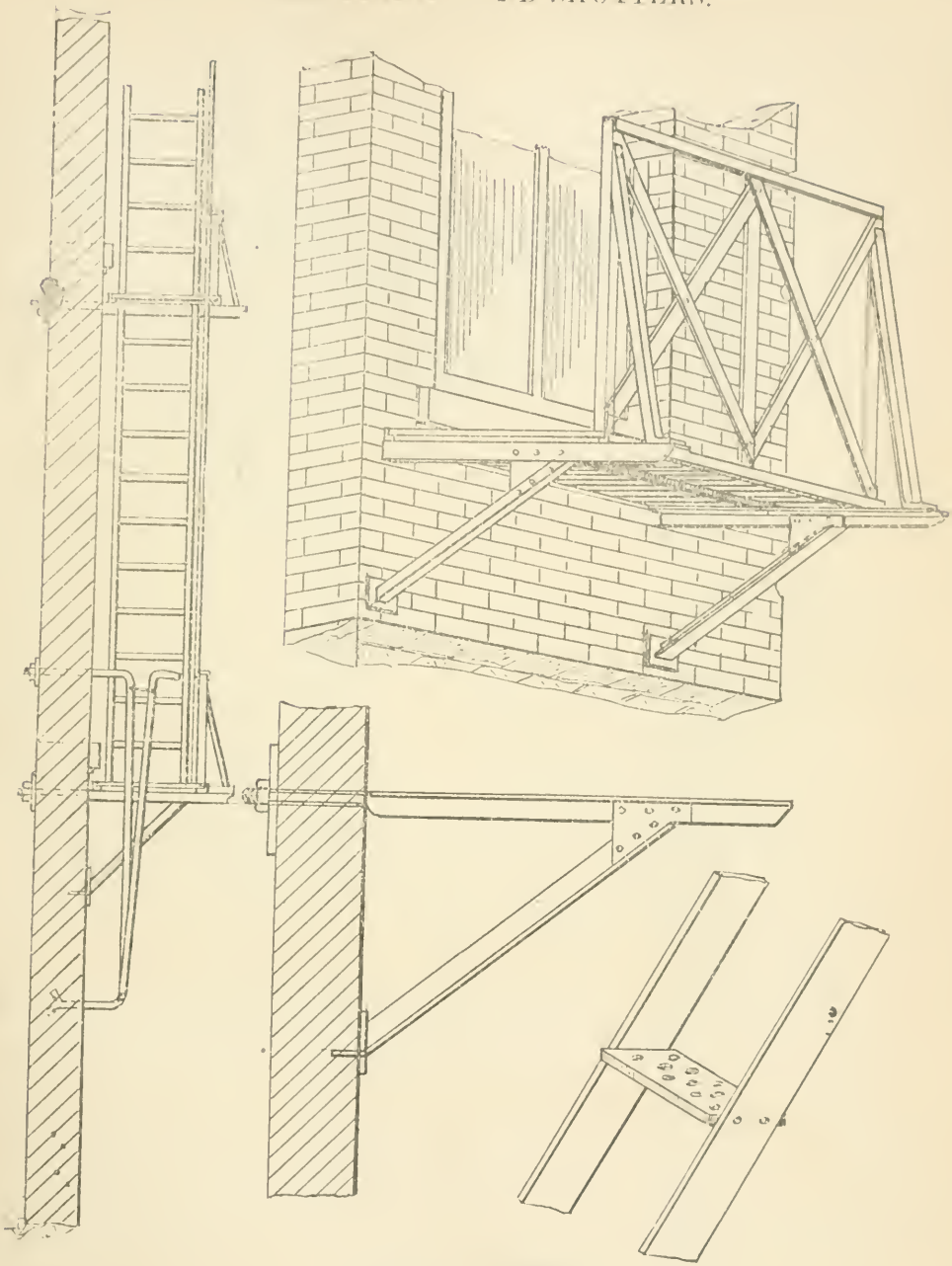


Fig. 50. Fire Escape

Figs. 50 and 50 (*a*) show a form of fire-escape. The Inspectors insist that the details of construction be based on the most scientific principles as to strength, capacity, and general efficiency. The location is also of greatest importance, and in each case not only the letter but the spirit of the law should be observed.

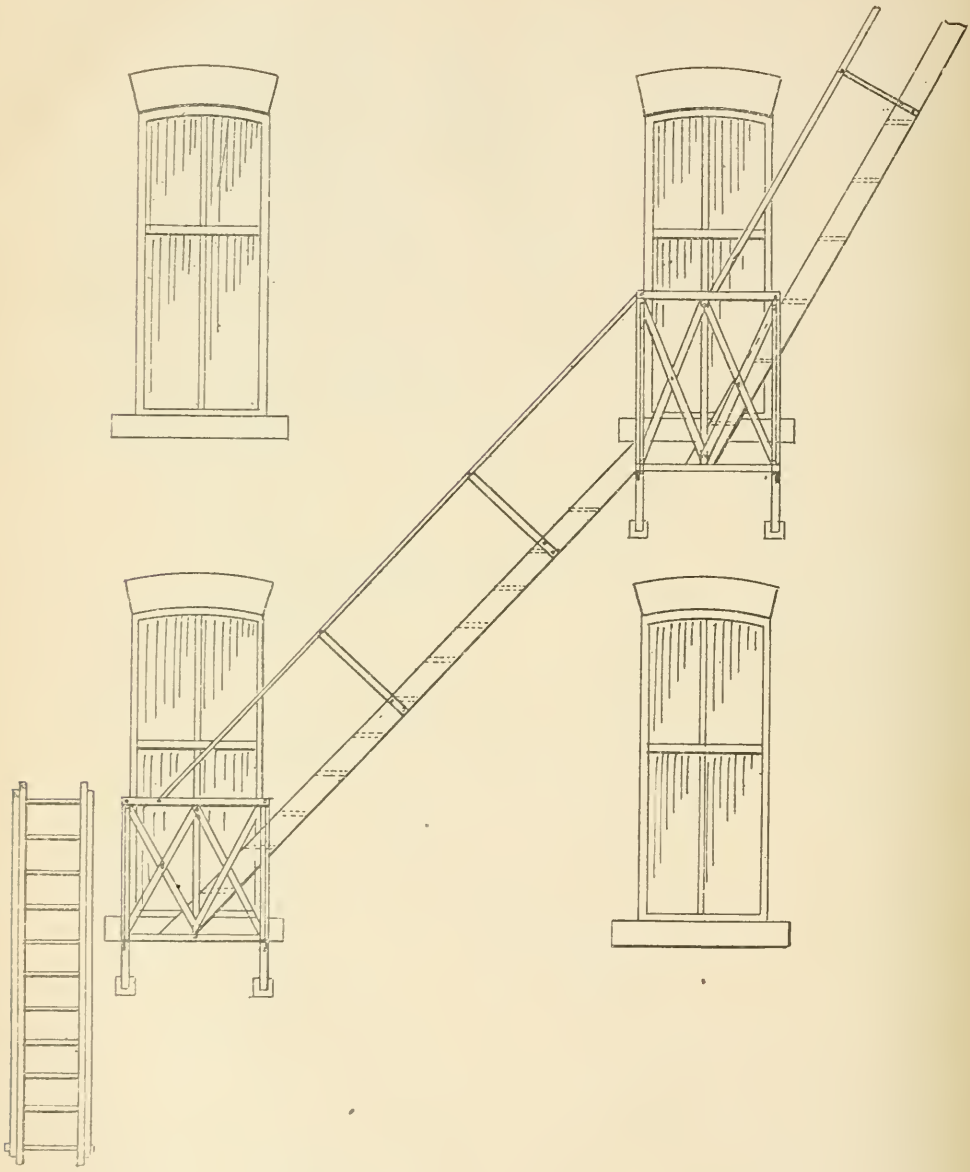


Fig. 50 (*a*). Fire Escape.

Figs. 50 (*b*), 50 (*c*), 50 (*d*) and 50 (*e*) show a system of fire shutters. This is also a requirement of the Ontario Factories Act. The openings leading to all fire-escapes require to be protected with iron shutters or iron or tinned doors.

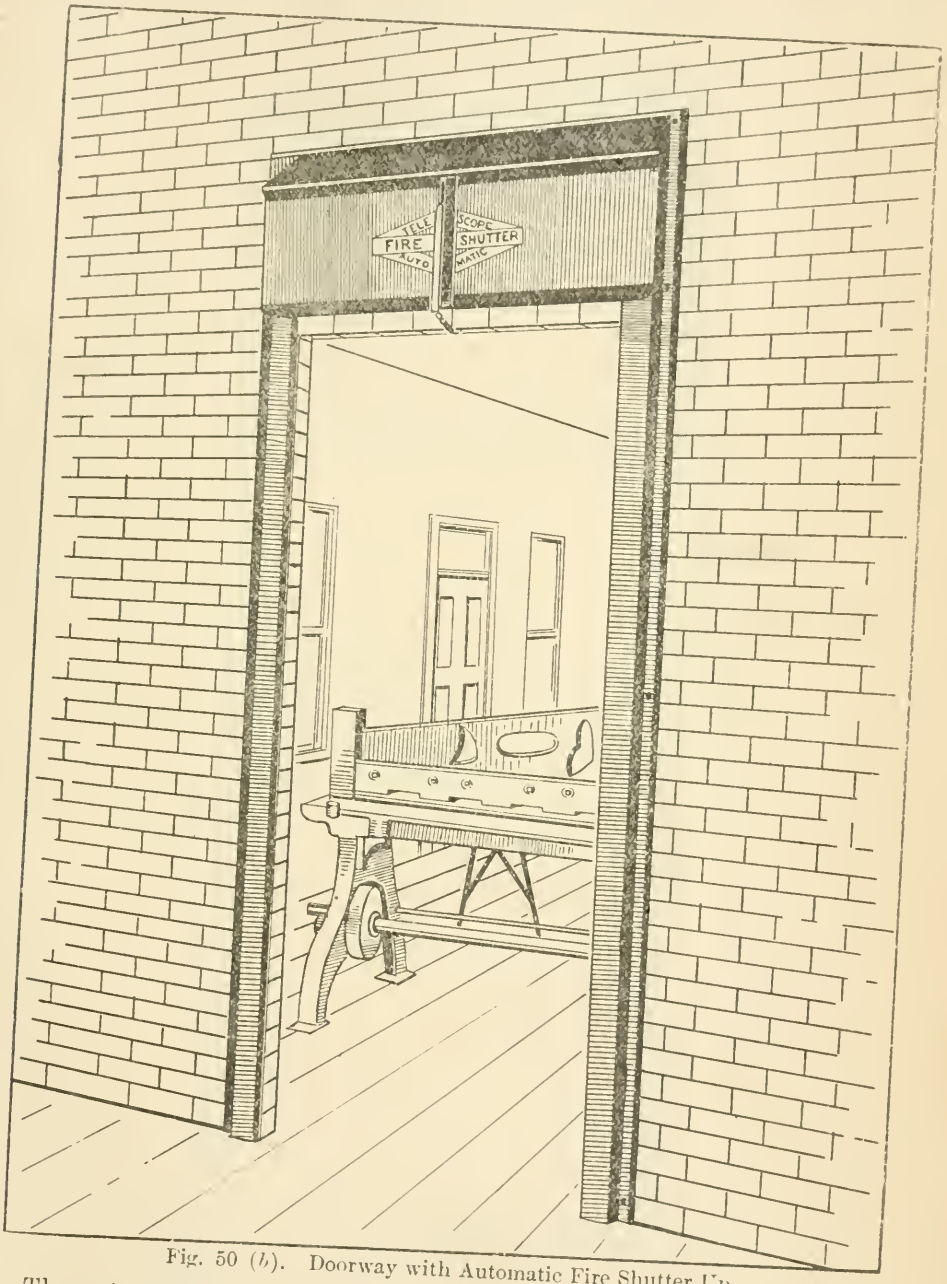


Fig. 50 (*b*). Doorway with Automatic Fire Shutter Up.

The cuts presented herein show an iron shutter, closed and open. Like other devices for fire protection, this device can be provided with a fusible fastening that will permit the shutters to close automatically under certain degrees of heat.

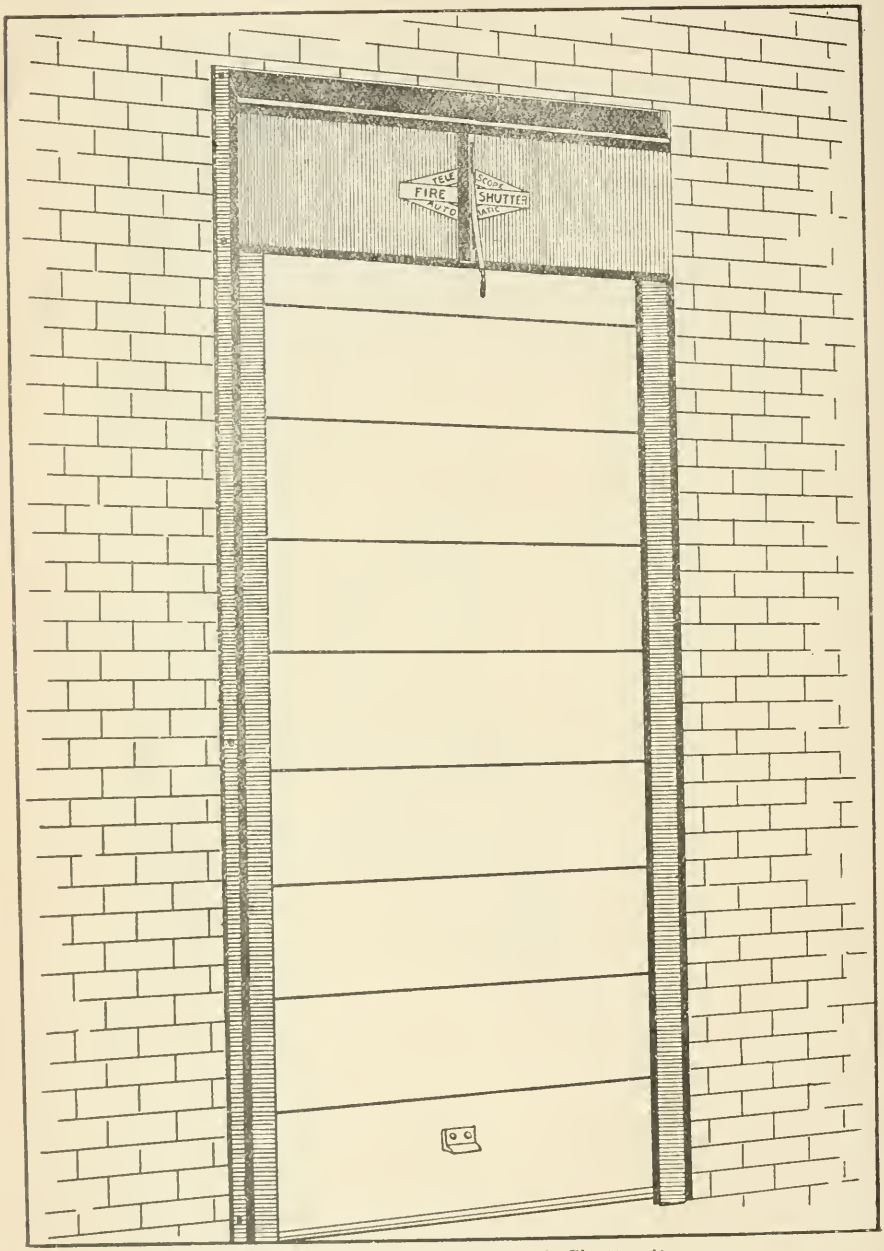


Fig. 50 (*c*). Doorway with Automatic Shutter Down.

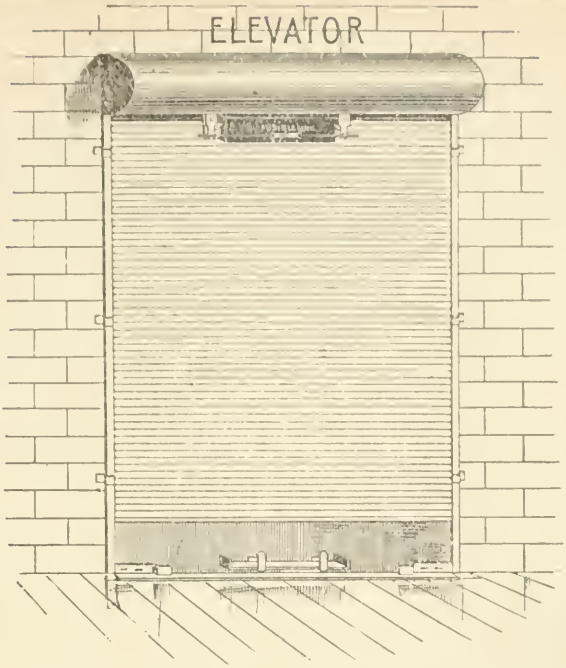


Fig 50 (*d*). Fire Door for Elevator, (Closed.)

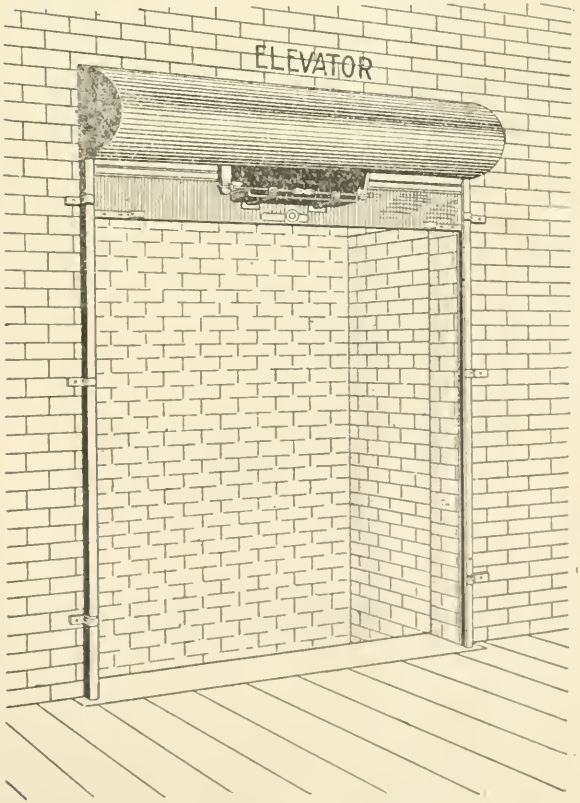


Fig. 50 (*e*). Fire Door for Elevator, (Open).

LAUNDRY MACHINERY.

Fig. 51 shows a type of ironing mangle, with a guard to protect the operator. This guard consists of a straight piece of wood running parallel with the rolls, and fastened securely at each end, leaving a space sufficient for the materials to pass under, but not sufficient for the hands or fingers to come in contact with the rolls. A guard for the same purpose is often made in the form of a roller, and found to be equally effective in preventing accidents.

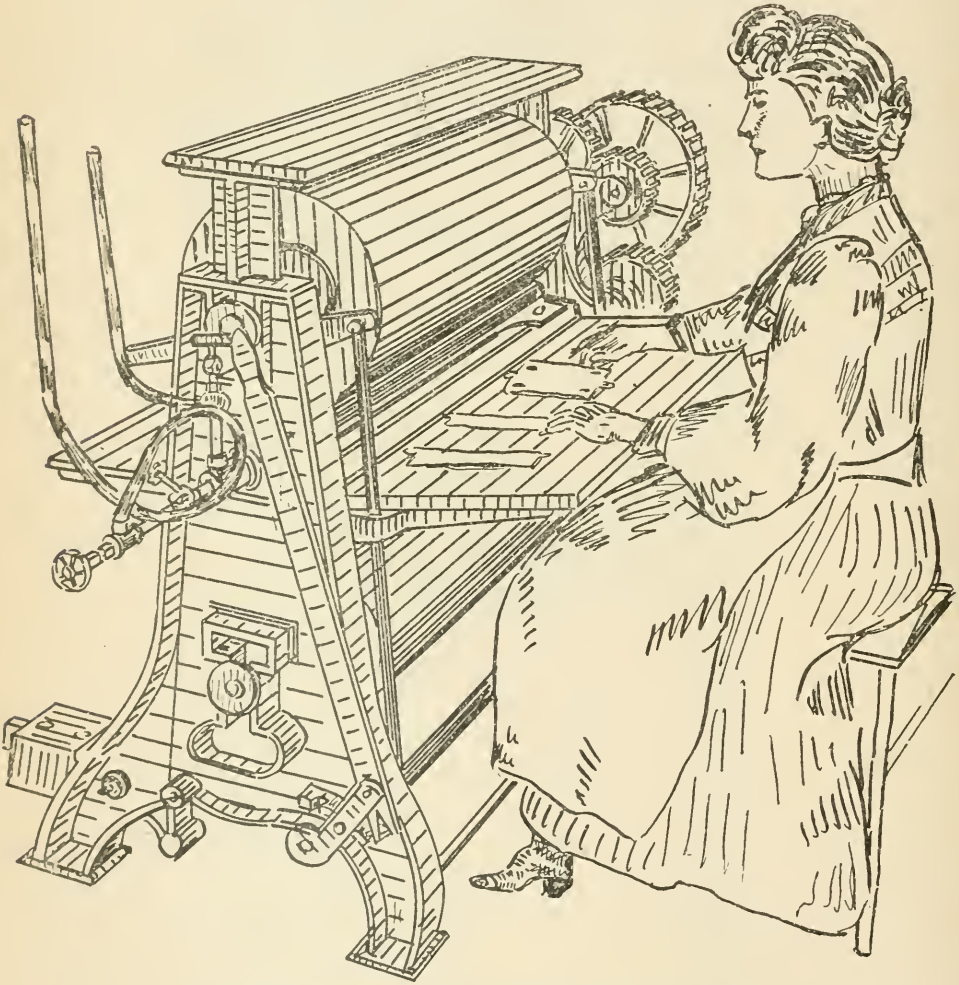


Fig. 51. Guard for Ironing Mangles and Roll Feed Machinery.

Fig. 52 shows a type of a collar and cuff ironer. On this machine is shown the necessary guard in front of the feed rolls, as well as a complete covering for all gears connected with the machine. This latter protection should be provided for all exposed gears.

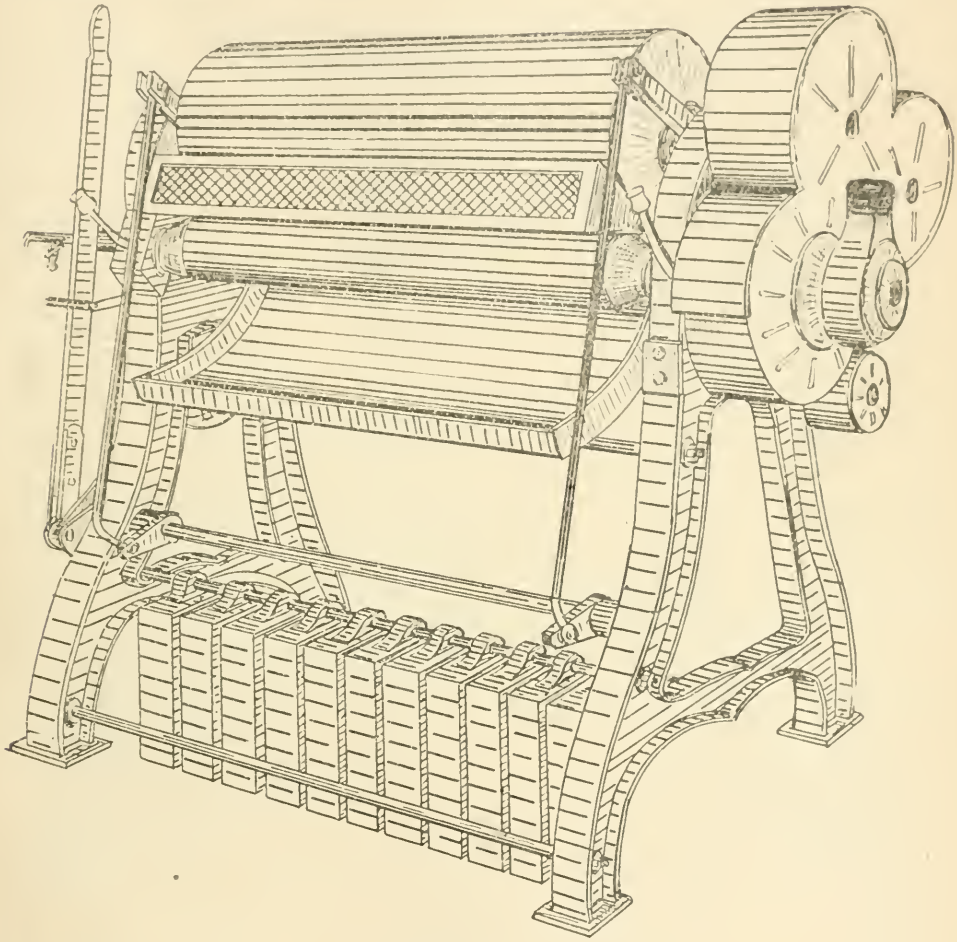


Fig. 52. Collar and Cuff Ironer.

Figs. 53 and 54 show a practical guard for an extractor. This device is shown attached to the machine, as well as a sectional view of its parts. It can be attached to any machine now in use, and when so attached the machine cannot be put in motion until it is closed, nor can it be removed until the machine stops.

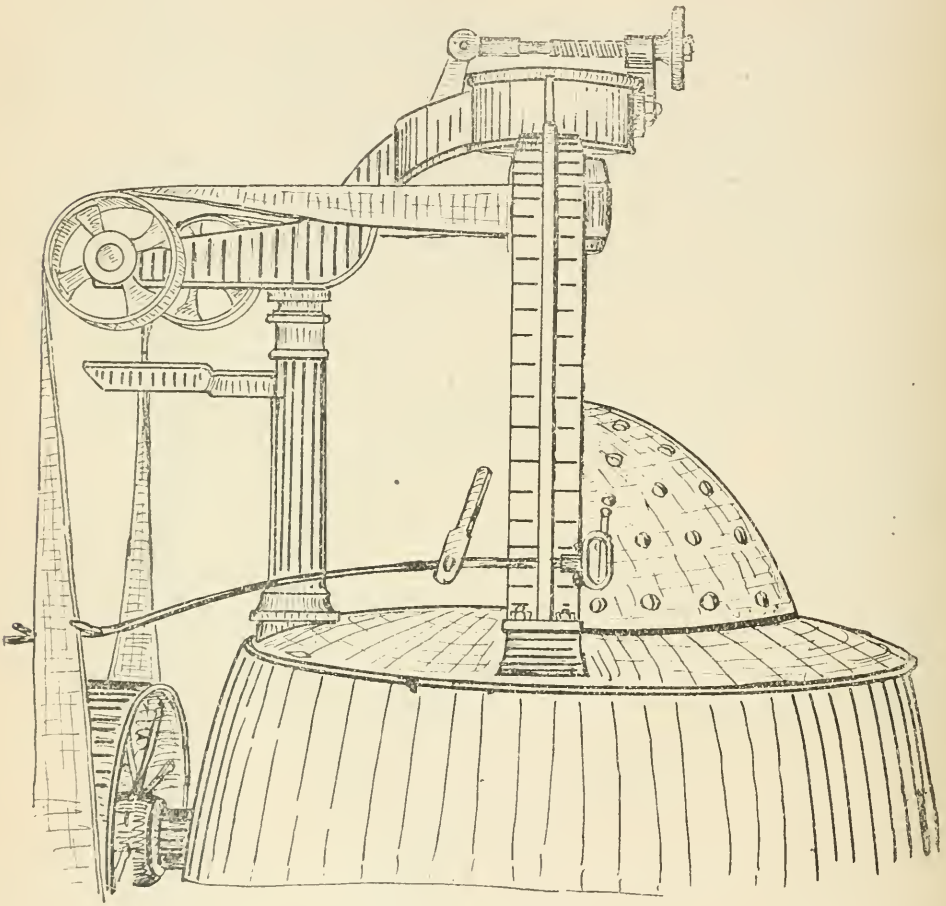


Fig. 53. Extractor Guard.

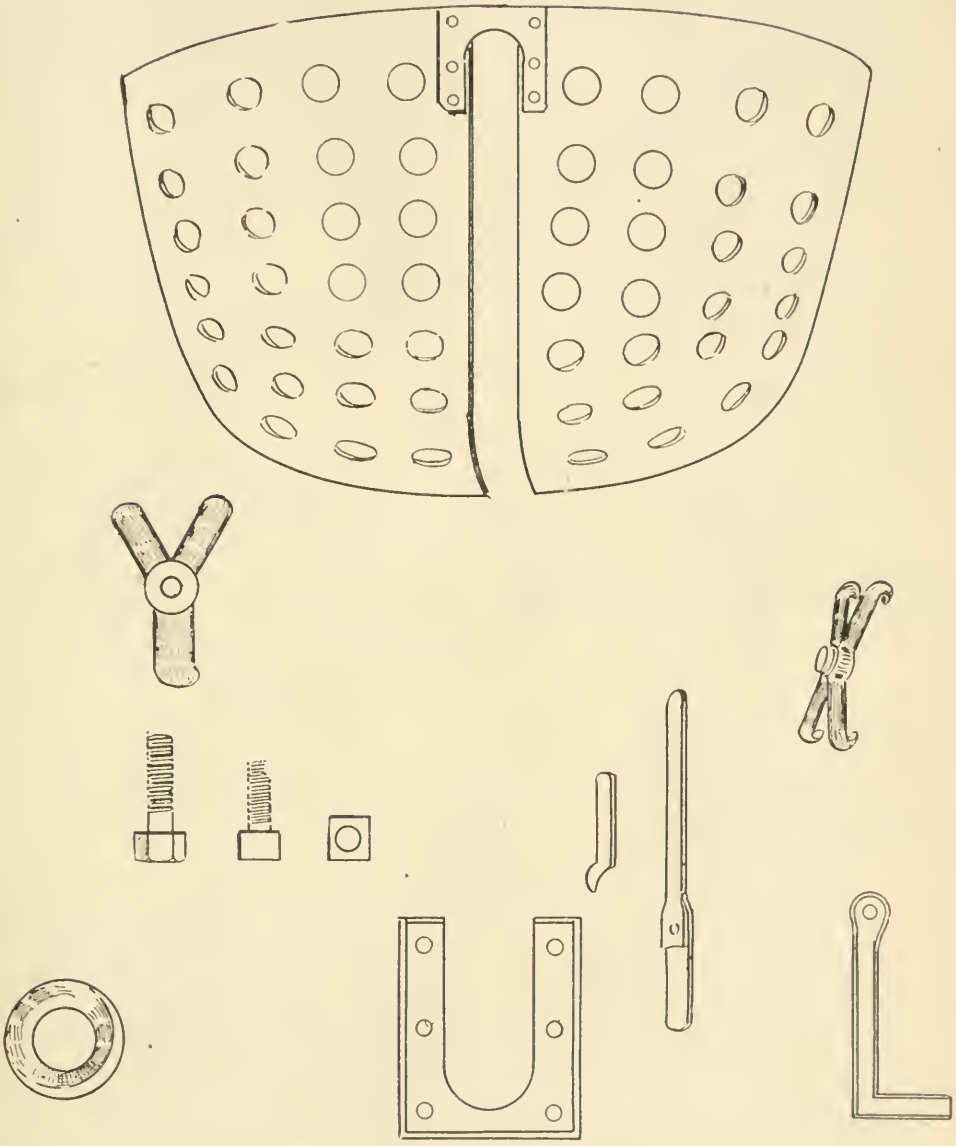


Fig. 54. Sectional View of Extractor Guard (Fig. 53.)

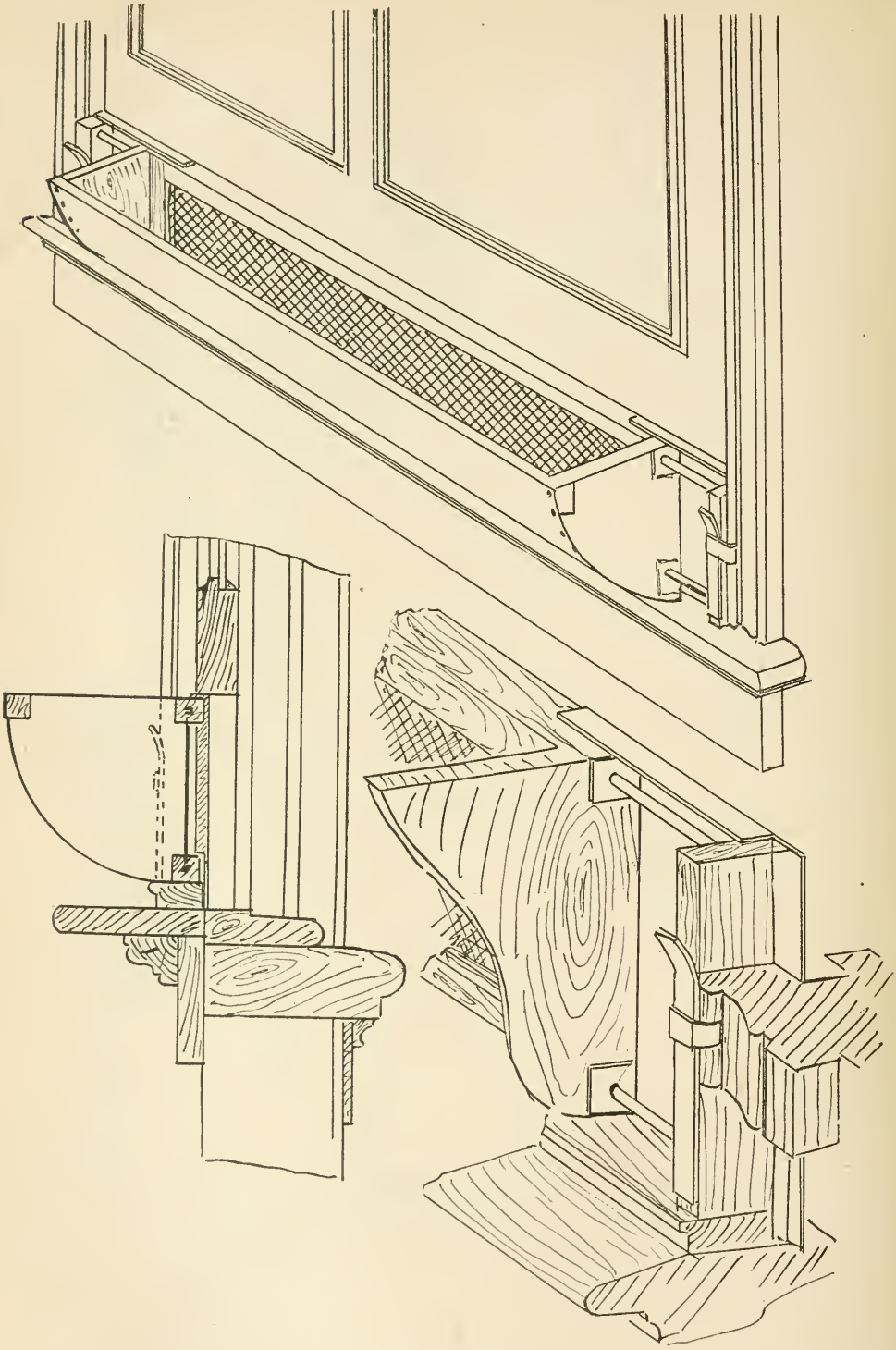


Fig. 55. Adjustable Window Ventilator.

WINDOW VENTILATOR.

Fig. 55 shows a device for ventilating rooms without the danger of creating direct drafts, being adjustable in construction. It can readily be applied in all cases where suitable ventilation is not otherwise provided. The front can be constructed with iron, wood, or glass, as the case may require.

MACHINE SHOP TOOLS.

The machine shop contains many tools hazardous to the workman, and it is only by the greatest precaution that accidents are avoided from this source.

Figs. 56 and 57 show the improvements that can be made in guarding an ordinary machine lathe. Fig 56 shows the machine with all the gears exposed. Fig. 57 shows the same lathe with all the gears covered.

It has been contended both by manufacturers and workmen that machines could not be practically protected because of frequent changes necessary to adapt them to different kinds of work. The Inspectors have always claimed that there has never been an honest effort in this direction. Machines are invariably made with a view to production, their safety being a secondary consideration. The Inspectors further claim that general protection for all machinery should be provided by the maker of the machine.

Gears on drills, revolving set screws on chucks, lathes, drills, or shafting should be always regarded as a source of danger. The travel of horizontal planers is another source of danger, and should be securely guarded. Cranes, hoists, and derricks should receive careful attention as to their capacity and equipment of safety.

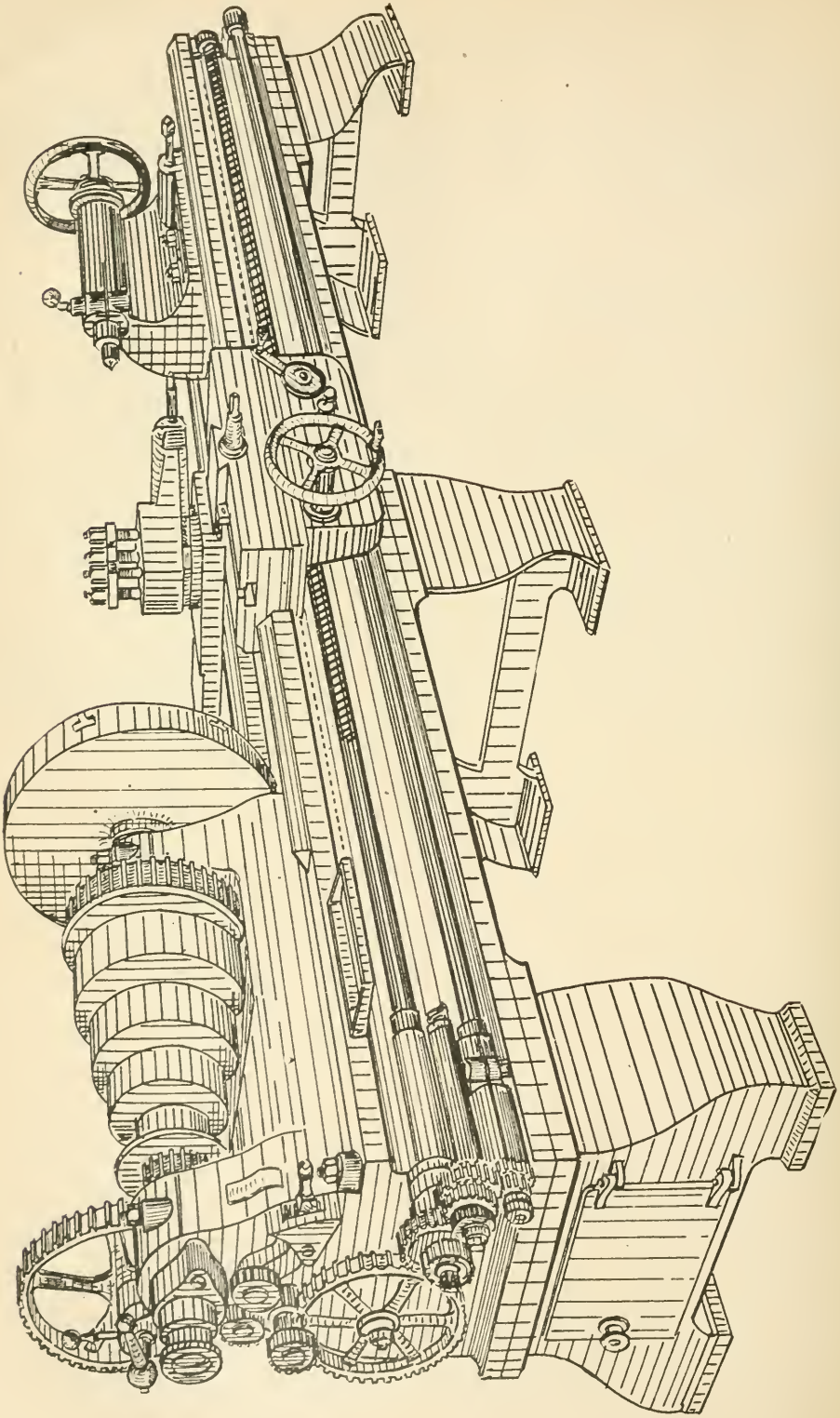


Fig. 56. Machine Lathe with Gears Exposed.

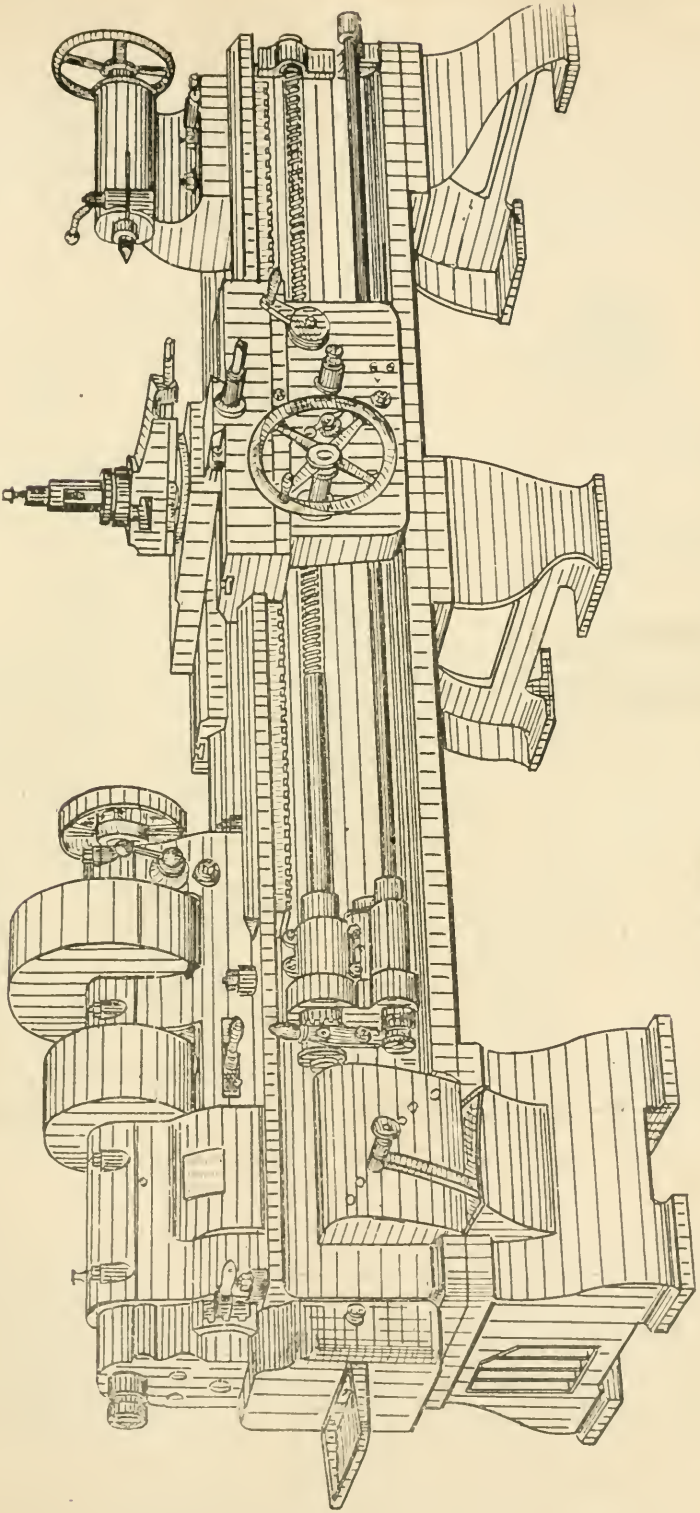


Fig. 57. Machine Lathe with Gears Covered.

PRINTING PRESSES.

Fig. 58, 58 (*a*), and 58 (*b*) shows a guard for protecting the dangerous part of a continuous self-acting printing press. Like the machine lathe, it has been said that it was not possible to guard this type of a machine in any practical manner, and not until many severe accidents were recorded against it was any honest effort made to improve its safety.

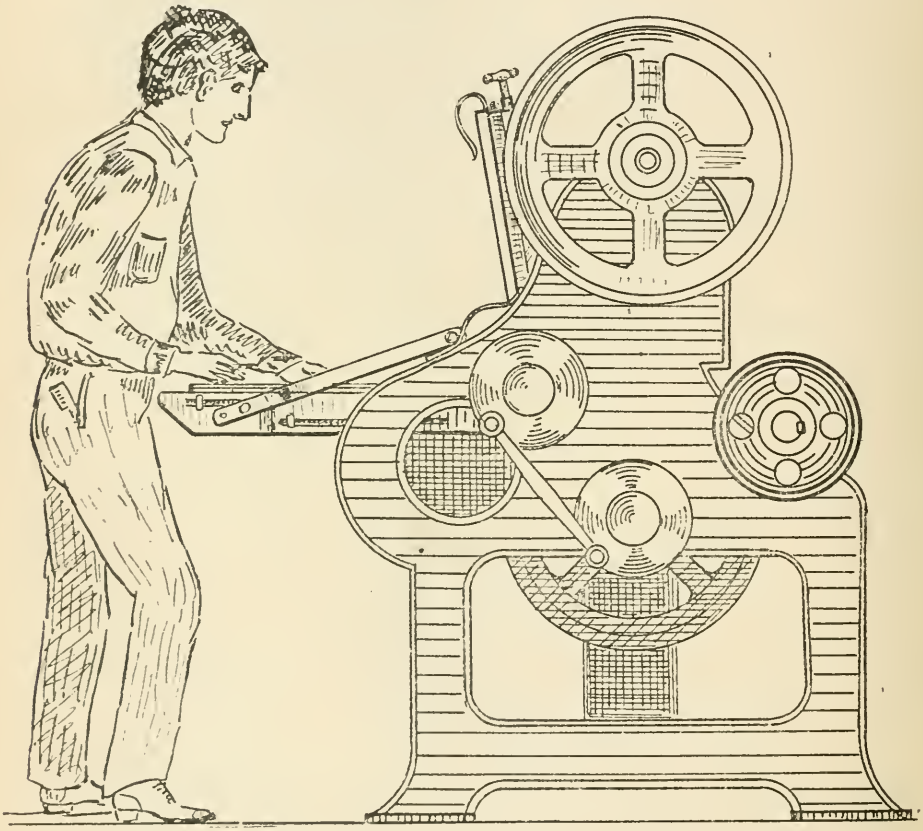


Fig. 58. Colt's Armour Press showing Guard.

The Sunlight Soap Company, in their home factory, devised the guard shown in Fig. 58, which has proved its usefulness by the fact that since its adoption not a single accident has happened in their works from that source. In the ordinary printing establishment many of the lighter and some of the heavier presses are provided with a balance wheel, light or heavy, as the machine may require. These balance wheels in some cases run at a high rate of speed, and in others not so fast; but in all cases they should be safely guarded.

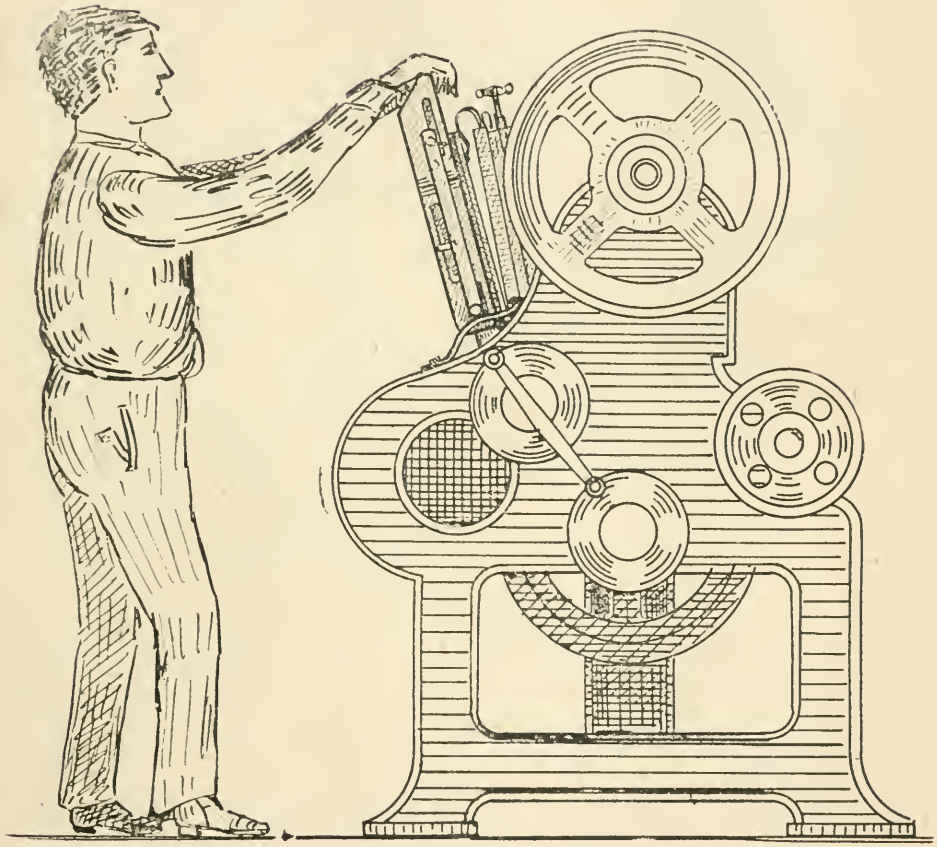


Fig. 58 (*a*). Colt's Armour Press showing Guard.

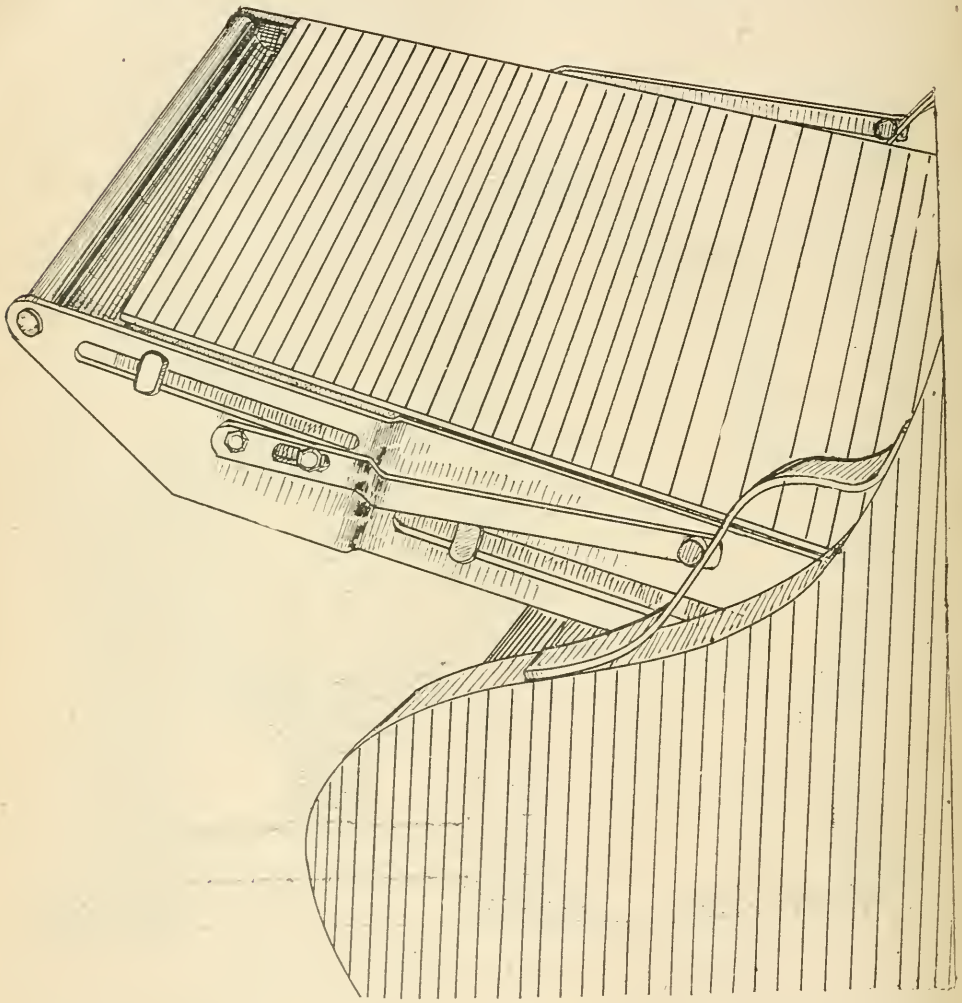


Fig. 58 (*b*). Colt's Armour Press showing Guard.

STEAM ENGINES AND THEIR CONNECTIONS.

Fig. 59 shows a valve for water gauge on boiler. The safety claimed for this device is that in event of a water-glass breaking the valve closes automatically by the action of the steam rushing towards the opening which is caused by the broken glass. Another feature of advantage claimed for this device is that another glass can be put in place, after which the valves open automatically as soon as equal pressure is restored.

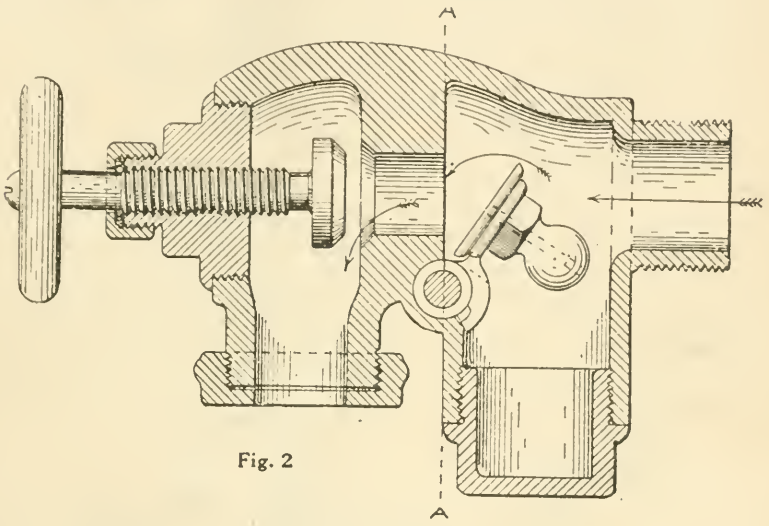


Fig. 59. Safety Valve for Water Gauge or Boiler.

Fig. 60. The device shown in this illustration is intended to shut off the steam from entering the cylinder of an engine when from any cause the speed is increased or decreased, such as the breaking of the governor belt, blowing out of cylinder heads or breaking or disconnection of crosshead, or from any similar cause. There are other devices for this purpose, operated by electricity, and so arranged that the engine can be closed down from any part of the factory. There are also automatic valves used to advantage in connecting batteries of boilers. These valves close automatically in event of any disturbance to any one of the boilers caused by low water bursting flues, plugs, or connections. or from any similar cause.

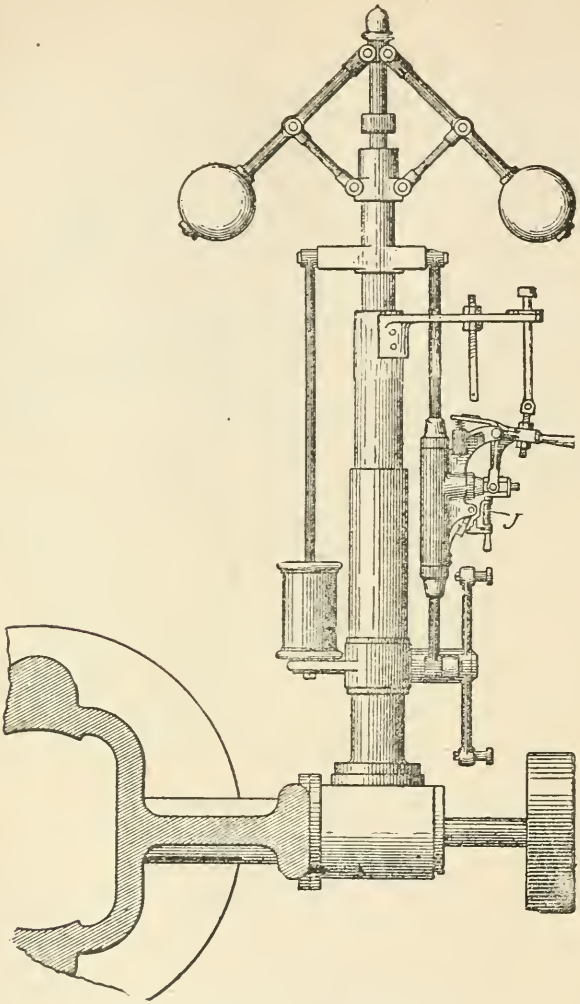


Fig. 60. Engine Stop and Speed Limit.

NON-EXPLOSIVE DEVICES.

All of the following articles are on the market as provided with safety and non-explosive devices:

Filler opening caps for tanks.
Gasoline cans.
Automobile tanks.
Launch tanks and fillers.
Launch cartridge and carburetter combination.
Workman's cartridge tank combination.
Interior safety cans.
Ether containers.
Lithographers' and printers' cans.
Gasoline tanks with pump.

Vent indicator and non-explosive device.
System for air-pressure tanks.
System for vessels carrying gasoline.
System for motor cars.

Safety non-explosive lamps and lanterns are also on the market. Such devices should be commendable for factories and tenements, and even for family use where lamps are used. The safety lantern is commended to watchmen and farmers, or, in fact, to any persons who realize the danger from fire so prevalent in an ordinary lamp or lantern. These lamps and lanterns are made strong and durable at a cost slightly above that of an ordinary lamp or lantern. It is claimed that the flame will extinguish upon falling to the floor or ground, or on being kicked over, or from any similar cause.

EMERGENCY DOOR LOCKS.

There is on the market an emergency door lock, especially adapted for emergency doors, such as doors leading to fire-escapes or where it is important that factory doors be kept locked from the outside. This device is also well adapted for churches, schools, theatres, etc. This device consists of a bar fastening on the inside, crossing the doors about breast high. It is so arranged that persons pushing, falling, or jostling against this bar will immediately release the doors, which will swing outward to the fullest extent. Only a slight pressure is necessary to release the bars from the inside, but the doors cannot be opened from the outside with a burglar's jimmy.

FIRST AID IN ACCIDENTS.

First aid in accidents involves a principle that has led the triumphant progress of modern surgery. The greatest danger to wounds from accidents is due to contamination with foreign substances, not always visible, but far-reaching in effect. It has been established that in recent wars, by the prompt application of first aid, fatalities were reduced to the lowest ratio in the history of warfare.

First aid cabinets and charts are almost an absolute necessity in every factory where a considerable number of persons are employed. As indicated in another part of this report, in some States and Provinces it is a statutory enactment that first aid cabinets be provided. These appliances, established as they are on such a high sense of humanity, should require nothing more than an opportunity to establish them in every place where an accident is possible.

INDEX TO ILLUSTRATIONS.

In the following Index the names and addresses of makers are given as far as could be learned:—

Sheldon & Sheldon, Galt, Ont.; the McEachren Company, Galt; the Sturtevant Ventilating Company, Montreal, and many others, manufacture the systems of fans, heating, ventilating, and exhaust, shown in Figs. 1, 2, 3, 4, 5, 6, and 7.

Figs. 8, 9, 10 and 10 (*a*). Emery and grindstone guards.

Figs. 10 (*b*) and 10 (*c*). Safety collars for emery wheels. The Safety Emery Wheel Company, Springfield, Ohio.

Figs. 11 and 11 (*a*). Shaper guards. H. H. Steer, Windsor.

Fig. 12. Shaper guard. J. Ballantine & Co., Preston.

Figs. 13, 14, and 15. Shaper guards, from Mr. Guyon's collection, Montreal, Que.

Fig. 15 (*a*). Shaper guard. J. M. Jones, Hamilton and Buffalo, N.Y.

Fig. 16. Buzz planer guard.

Fig. 17. Buzz planer guard, taken from Mr. Guyon's collection.

Fig. 18. Buzz planer guard. J. M. Jones, Hamilton and Buffalo, N.Y.

Fig. 18 (*a*), 18 (*b*) and 18 (*c*). Buzz planer guards.

Fig. 19. Saw guard. J. Ballantine & Co., Preston.

Fig. 20. Saw guard.

Fig. 21. Saw guard. The National Saw Guard Company, Kansas City, Missouri.

Fig. 22. Saw guard.

Fig. 23. Saw guard. Kirchner, Paris. Taken from Mr. Guyon's collection.

Fig. 24. Saw guard. J. A. Fay and Egan Company, Cincinnati, Ohio. Ohio.

Figs. 24 (*a*) and 24 (*b*). Saw guards. J. M. Jones, Hamilton and Buffalo, N.Y.

Figs, 25, 25 (*a*), 25 (*b*), and 25 (*c*). Drop press and stamping machine guards.

Fig. 26. Set screw countersunk.

Fig. 26 (*a*). Set screw countersunk and unprotected shaft end.

Fig. 26 (*b*). Safety set screw. Economical Supply Co., Toronto.

Fig. 26 (*c*). Shaft end protected.

Fig. 27. Protruding set screw and keyway.

Figs. 28 and 28 (*a*). Pinion gears, properly guarded.

Fig. 29. Exposed bevel gear.

Fig. 29 (*a*). Bevel gear, guarded.

Fig. 30. Gear protected.

Fig. 30 (*a*). Guard for pinion gears, revolving one way only.

Fig. 31. Knife guard. Perfect Guard Company, Indianapolis, Ind.

Fig. 32. A device for protecting the operator when cleaning windows. The Safety Balcony Company, Montreal, Que.

Figs. 33, 34, and 35. Safety appliances for bake-shop machinery.

Fig. 36. Guard for band saw. Mr. Guyon's collection, Montreal.

Fig. 37. Small double edger. Waterous Machine Company, Brantford.

Fig. 38. Garland chain feed edger. William Hamilton, Peterboro.

Fig. 39. Roll feed edger, with finger guards. William Hamilton, Peterboro.

Fig. 40. Combination gang edger, with safety feed rolls. William Hamilton, Peterboro.

Fig. 41. Lath bolter. William Hamilton, Peterboro.

Fig. 42. Gang lath mill. William Hamilton, Peterboro.

Figs. 43 and 44. Shingle jointers. William Hamilton, Peterboro.

Fig. 45. Full automatic elevator gates. Richmond Safety Gate Company.

Fig. 45 (*a*). Open-at-will gates. The Richmond Safety Gate Company.

Fig. 45 (*b*). Gravity fire doors. The Richmond Safety Gate Company.

Figs. 46 and 47. Elevator fire-proof doors. The Richmond Safety Gate Company.

Figs. 48 and 49. Hatch doors for elevators and guard for same. R. S. G. Company. Elevators and their appliances are made by Otis-Fensom Elevator Company, Hamilton: the Turnbull Elevator Company, Toronto; Parkin & Parkin, Hamilton; William Malloch & Co., London; Richmond Safety Gate Company, Richmond, Indiana, and others.

Figs. 50 and 50 (*a*). Fire escapes, section and elevation. Fire escapes are made by McGregor and McIntyre, Toronto; Shipway Iron Company, Toronto; Thomas Houlgrave, Toronto; Geo. B. Meadows, Toronto; the Stratford Bridge and Iron Company, Stratford; Kingdom-Smith, Hamilton; Trudell & McAdam, Ottawa, and other manufacturers.

Figs. 50 (*b*), 50 (*c*), 50 (*d*), and 50 (*e*). Fire shutters for doors and windows. Ford Fire Shutter Co., Niagara Falls, Ont., and the A. B. Ormsby Co., Toronto.

Fig. 51. Mangle.

Fig. 52. Collar and cuff ironer.

Figs. 53 and 54. Extractor guard and section. The Johnson Mill Specialty Company, Utica, N.Y.

Fig. 55. Adjustable window ventilator.

Figs. 56 and 57. Machine lathe gears, exposed and covered. McGregor & Gourlay, Galt.

Figs. 58. 58 (*a*), and 58 (*b*). Guard for printing press. Sunlight Soap Company, Toronto.

Fig. 59. Valve for water gauge. The Northern Specialty Company, Utica, N.Y.

Fig. 60. Engine stop and speed limit. J. K. Wright, 136 Liberty Street, New York.

Non-Explosive Devices.

The Non-Explosive Safety Container Company, 1133 Broadway, New York.

Safety non-explosive lamps and lanterns, Stillman Safety Lamp Company, 95 William Street, New York.

First aid in accidents charts and emergency box, Johnson & Johnson, New Brunswick, N.J.

Emergency door locks, Hugh Elmer Clark, 47 Vick Park B., Rochester, N.Y.

ABSTRACT OF ONTARIO FACTORY LAWS.

16.—(1) (*a*) The employer of every factory shall keep the factory in a clean and sanitary condition and free from any effluvia arising from refuse of any kind.

(*b*) The employer of every factory shall keep privies, earth or water-closets and urinals in good repairs and in a sanitary condition, and shall be held responsible for keeping closets separated for male and female employees.

(*c*) The employer of every factory shall heat each compartment used by him and regulate the temperature so as not to be injurious to the health and comfort of the employees, and to be consistent with the work performed therein, but in no case shall the temperature be less than 60 degrees Fahrenheit unless specially authorized by the Inspector in writing.

(*d*) The employer of every factory shall be held responsible for ventilating the factory in such a manner as to keep the air reasonably pure and so as to render harmless, as far as reasonable practicable, all gases, vapors, dust or other impurities generated in the course of the manufacturing process or handicraft carried on therein that may be injurious to health.

(*e*) The employer of every factory shall not allow overcrowding while work is carried on therein, so as to be injurious to the health of the persons employed therein, the standard to be allowed being 300 cubic feet of room space for each employee.

(*f*) The Inspector of Factories shall have power in his discretion to require the employer to provide a sufficient number of spittoons and place the same in different parts of the factory, and keep the same clean.

(*g*) In every factory where any process is carried on by which dust is generated and inhaled by the workers to an injurious extent, if such inhalation can by mechanical means be prevented, or partially prevented, the inspector may, subject to such regulations, if any, as may be made in that behalf, direct that such means shall be provided within a reasonable time by the employer, who in such cases shall be bound so to provide them.

(*h*) The employer of every factory shall provide a supply of wholesome drinking water and proper drinking cups for employees, which must be at least eight feet distant from water-closets and urinals.

(2) Where grinding, polishing or buffing is carried on in any shop the preceding clause (*g*) shall apply, irrespective of the number of persons employed therein.

(3) The employer of every factory who for thirty days refuses or neglects to comply with the above requirements or conditions after being notified in writing in regard to the same by the Factories Inspector shall be deemed to be guilty of a contravention of the provisions of this Act.

19. It shall not be lawful to keep a factory so that the safety of any person employed therein is endangered, or so that the health of any person employed therein is likely to be permanently injured, and whoever so keeps a factory shall, upon conviction thereof, incur and be liable to imprisonment within the common gaol of the county within which the offence was committed, for a period of not more than twelve months, or to a fine of not more than $500, with costs of prosecution, and in default of immediate payment of such fine and costs, then to imprisonment as aforesaid.

20.—(1) In every factory,

(*a*) All dangerous parts of mill gearing, machinery, vats, pans, caldrons, reservoirs, wheel-races, flumes, water channels, doors, openings in the floors or walls, bridges, and all other like dangerous structures or places shall be as far as practicable securely guarded.

10. "Mill-gearing" shall comprehend every shaft, whether upright, oblique or horizontal, and every wheel, drum or pulley, by which the motion of the first moving power is communicated to any machine appertaining to a manufacturing process.

(*c*) The openings of every hoistway, hatchway and well-hole used for power elevators shall be at each floor, including the basement, provided with and protected by good and sufficient trap doors or self-closing hatches, or by gates closing automatically, which gates shall not be less than five feet six inches high, and may be in sections, if desired. The sides of the shaft on all floors, including basement, not guarded by gates, shall be protected by enclosures at least six feet high, approved by the inspector. Where the elevator is enclosed in a tower having walls over six inches thick, it may be provided with an extra operating rope outside the tower. In every case the elevator must be provided with a lock to secure the operating rope. In case of elevators operated by hand power the gates must not be less than three feet in height and must be automatic closing gates, and the sides not protected by gates must be protected by enclosures not less than four feet in height, approved by the inspector. A clearly painted sign marked "Dangerous," having letters not less than four inches in height, must be affixed or stencilled on the bottom rail of every gate, where it will be plainly visible from the outside. The top of every elevator platform shall be provided with a sufficient guard to protect the occupants, approved by the inspector.

(*d*) All elevator cabs or cars, whether used for freight or passengers, shall be provided with some suitable mechanical device to be approved by the inspector, whereby the cab or car will be securely held in the event of accident to the shipper, rope or hoisting machinery, or from any similar cause.

(*e*) Any other particulars which any inspector from time to time considers dangerous, and in regard to which he gives notice to that effect to the employer, shall likewise, as far as practicable, be secured or securely guarded.

(*f*) Inflammable material, such as coal oil or petroleum, benzine and naphtha, and explosives of all kinds shall be kept stored when not in actual use in a building separated from the other parts of the factory, or in a fire-proof compartment of the factory approved of by the inspector.

21.—(1) In every factory,

(*a*) There shall be such means of extinguishing fire as the inspector, acting under the regulations made in that behalf, directs in writing;

(*b*) The main inside and outside doors shall open outwardly, and any door leading to or being the principal or main entrance to the factory or to any tower stairways, or fire-escapes therein or belonging thereto, shall not be bolted, barred, or locked at any time during the ordinary and usual working hours in the factory.

(2) The owner of every factory over two stories in height, and where deemed necessary by the inspector, the owner of every factory over one storey in height, shall within six months of the time of passing of this Act, provide the said factory with one or more systems of fire escape as follows, and shall keep the same in good repair:

(*a*) A sufficient number of tower stairways with iron doorways within reach of or having easy communication with all the working rooms of the factory; or

(*b*) A sufficient number of iron or other uninflammable fire-escapes on the outside of the building, such fire-escapes to consist of stairways with railing, or in case the special approval of the inspector is giving in writing then of iron ladders, and every such stairway or ladder shall be connected with the interior of the building by iron or tinned doors or windows with iron shutters, and to have suitable landings at every storey, including the attic if the attic is occupied as a workroom, and the said stairways to start at a distance of not more than eight feet from the ground or pavement; or to be

(*c*) Any other system of fire-escape that may be sanctioned under this Act by the Lieutenant-Governor-in-Council on the recommendation of the Factories Inspector.

(3) The owner or proprietor of any factory refusing or neglecting to provide the means of safe exit in case of fire prescribed in this section shall upon conviction thereof incur and be liable to a fine of not more than $500, with costs of prosecution, and in default of immediate payment of such fine and costs, be liable to imprisonment within the common gaol of the county for a period of not more than twelve months.

(4) A factory or workshop in which there is a contravention of this section shall be deemed to be kept unlawfully and so that the safety of any person employed therein is endangered.

51. The owner, proprietor, or manager of any factory hereafter established and to which this Act applies, shall not begin operations until he shall have received from the Factories Inspector a certificate of inspection of the factory and a permit to operate the same; and any such person violating the provisions of this section shall be liable to the penalties provided for in section 19 of this Act.

HON. J. O. REAUME

COMMISSIONER PUBLIC WORKS

JOHN ARMSTRONG

SECRETARY LABOR BUREAU.

SEVENTH REPORT

OF

The Bureau of Labor

OF THE

Province of Ontario

For the year ending December 31st

1906.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1907

WARWICK BRO'S & RUTTER, Limited, Printers,
TORONTO.

ERRATA :—Black figures "1905" top of each Page 17 to 64 should read "1906."

To His Honour Wm. Mortimer Clark, K.C.,
Lieutenant-Governor of Ontario.

May it Please Your Honour:

The Undersigned has the honour to present herewith for your consideration the Report of the Bureau of Labor of the Province of Ontario for 1906.

I have the honour to be,

Your Honour's most obedient servant,

J. O. REAUME,
Minister of Public Works.

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SEVENTH REPORT

OF THE

BUREAU OF LABOR

1906

To the Honorable J. O. Reaume,
Minister Public Works, Ontario:

Sir,—I have the honor of submitting to you herewith the Seventh Report of the Bureau of Labor.

I have the honor to be, sir,

Your obedient servant,

JOHN ARMSTRONG,

Secretary.

INTRODUCTION.

In presenting herewith the Seventh Report of the Labor Bureau of the Province of Ontario, and the first during my term of office, it is a pleasing feature to note in this report that the Government has sanctioned the placing of two Free Employment Bureaus, viz.: one in the City of Hamilton, and one in the City of Ottawa, for the purpose of receiving applications from all classes of persons seeking employment, and applications from all those desiring to employ labor. While this step is a new adventure for the Province of Ontario, the system has existed for many years in England, Australia, New Zealand and the United States, with appreciative and beneficial results. The creation of Free Employment Bureaus is fast becoming a necessity in this Province. It is the most satisfactory method to prevent fleecing the unemployed of their (in many instances) last dollar for information which, in too many cases, is unreliable, and results in loss of time and money. The establishment of from four to six such bureaus in as many cities, where free registration and trustworthy information was obtainable, would more than compensate for the outlay from benefits received by the out-of-work people, and also be a great convenience to those in quest of help; and an equalization of the unemployed between near-by cities would result from such a system, as one bureau could communicate with another on short notice with this object in view. As workmen become less restless when employed, the voluntarily distributing of the unemployed by this means would minimize idle periods, thus inducing workmen to continuously remain in their own Province.

The Hamilton Branch of the Labor Bureau, was located on the 12th January, at 26 James Street, N., with C. H. Bampfylde as manager. That gentleman reports on the 31st of the same month that there were 119 applicants registered for work, including machinists, plumbers, moulders, painters, carpenters, brass buffers, blacksmiths, electricians, engineers, clerks, drill hands and plasterers, but the majority of the applicants were laborers or unskilled hands. During the same period, employers registered 40 vacancies, which included machinists, farm hands, woodworkers, drivers, painters, waitresses, toolmakers, blacksmiths and domestic help. Nineteen positions were filled through the direct agency of the bureau. In his second report he states, from the 1st to the 12th February, 38 unemployed registered, 13 vacancies were recorded, and two positions filled.

The Ottawa Branch Bureau was established at 87½ Clarence Street, on the 18th January, with Isaie Gauthier as manager. His first report shows that 30 out-of-work people registered, while applications for domestics, and male help numbered 28. These latter positions were readily filled. His second report dates from 7th to 14 February, and records laborers 7, painters 2, carpenters 2, and 3 domestics seeking employment. Help wanted was registered as follows:—Domestics 4, male help 3; situations filled 2.

These branch bureaus could also be utilized in collecting valuable information, and accurate statistics for publication in the annual report, such as the number of buildings erected in their localities, and their aggregate

cost; the amount spent on roadways and other permanent improvements; the amount spent for sanitary purposes, and the per cent. prosperity, or otherwise, of retail stores which, in a measure, would give an idea of the purchasing power of the people.

As the usual questions sent out to City, Town, Incorporated Village and Township Clerks, Labor Organizations and Manufacturers, by the late Secretary of the Bureau, and answers to the same returned previous to my coming into office on October 1st, the tabulation of figures from these departments cannot be expected to deviate materially from the general plan and the system followed for some years past, hence the tables will appear, in a measure, similar to these that have preceded them. Those sending in returns should always bear in mind that statistics to be valuable should be thorough and complete; and the great need of organized wage-earners is a more intelligent utilization of their respective organizations. A grea er amount of attention should be devoted to securing correct data from their own membership of the number of days worked, amount of wages paid, and the cost of living, than is at present obtained. The Department could give them much more satisfactory service in its annual reports were this the case.

Whether some of the items contained in the circular sent out to manufacturers, the answers to which are compiled in the "Industrial Statistics," are of such public importance as to require publicity might justly be considered by many as a debatable question.

It will be one of the paramount duties of the bureau, to undertake the task of securing the good-will of employers, and the hearty assistance and co-operation of wage-earners and labor organizations of the Province. This ideal is not optimistic. It can be brought about by judicious judgment between the two classes, calm deliberation, wise counsel, and conservative reasoning, which are potent factors in bridging chasms between capital and labor, as both in the end should be employed for the recognized benefit of each other.

The following names of Central Labor Organizations in Ontario, together with Secretary's name and address, came in too late for tabulation in proper place:—

Building Trades Council, John Dempsey, Secretary, Guelph.

Building Trades Council, T. Bond, Secretary, 129 Birge St., Hamilton.

Garment Workers' Council, J. Madigan, Secretary, 40 Murray St., Hamilton.

Building Trades Council, Alex. J. Murray, Secretary, 160 Rideau St., Kingston.

Allied Printing Trades Council, E. Chalcraft, Secretary, 350 Lyle St., London.

Building Trades Council, Jas. Dunn, Secretary, 645 Princess Avenue, London.

Building Trades Council, M. F. Mead, Secretary, 276 Murray St., Ottawa.

Allied Printing Trades Council, F. J. Hanlon, Secretary, 46 Cathcart St., Ottawa.

Building Trades Council, W. A. Beatty, Secretary, 114 King St., St. Catharines.

Int'l Association Machinists' Council, H. Bryson, Secretary, 275 Arthur Street, Toronto.

Ironmoulders' Board of Conference, F. C. Burgess, Secretary, Woodstock.

The following returns from labor organizations came in too late for classification.

Ironmoulders' and Coremakers' Int'l Union, No. 28, Toronto. Date of organization, July, 1859; total membership, 450; average earnings per week, $12; number of working hours for first five days, 45; on Saturday, 5 hours; wages paid half weekly, half fortnightly; average number of days idle per member during year, about 30; general cause of idleness, excessive heat and slackness of work; total number employed at trade in locality, about 800; cash benefits sickness, $5.25 per week; in case of death, $100 to $200; President, Wm. Worrell, 147 Sumach St.; Cor. Sec., Wm. Skimerton, 55 Hoskin Avenue, Toronto Junction; meets 1st and 3rd Thursday in month.

Coopers' Int'l Union of North America, No. 180, Toronto. Date organized, January, 1903; total membership, 38; average earnings per week, $15; number of working hours first five days, 50; number on Saturday, 5; wages paid weekly; total number employed at trade in locality, about 60 or 65; difference between members and non-members of organization, hours are same; in wages, members receive about $3 per week more than non-members; President, J. Harding; Cor. Sec., Fred W. Schmidt, 27 Lee Avenue; meets 1st and 3rd Wednesday in month.

United Brewery Workers of America, No. 312, Hamilton. Organized Nov., 1905; total membership, 42; average earnings per week, $10; number working hours first five days, 50; on Saturday, 7 during winter months, 10 hours during summer months; total number at calling in locality, male, 50; female, 2; President, W. Tuck, Hughson St. N.; Sec., Valentine Therdorff, 163 Bay St. N.; meets 2nd and 4th Saturday in month.

Cigarmakers' Int'l Union, No. 422, Berlin. Organized, July, 1899; total number, membership, male, 43; female, six; average earnings per week , male, $9, female, $9; number of working hours first five days, 40; on Saturday, 4 hours in summer, and six to eight hours in winter, wages paid weekly; average number of days idle per member during year, 20; cause of idleness, damp weather; total number employed at trade in locality, male, 59; female, 11; difference in hours and salary between members and non-members of organization, latter work 10 hours per day and receive from $2 to $8 per month less than members of organization; cash benefits, out of work, $3 per week; sickness, $5 per week for sixteen weeks in one year; case of death, $40 to $550; strike benefits, $5 per week for 16 weeks, then 3 per week till strike is settled; President, Fred Schultz; Cor. Sec., Steve Welkensen, box 224, Berlin; meets 2nd Wednesday in month, Executive Board meets every Monday at 5 p.m.

Circular to Clerks.

1. Names of industries started during 1905. Give name and nature of business and post-office address.

2. Have any industries changed hands? Name them.

3. Do you consider there is any opening in your locality for new industries? If so, of what character?

The Following Cities, Towns, Etc., through their Clerks, Responded to the Above Inquiries.

Alviston
Alliston
Arnprior
Alfred
Antrim
Almonte
Ameliasburg
Acton
Aylmer
Barrie
Brighton
Bath
Bancroft
Brigden
Bruce Mines
Brussells
Byng
Buxton
Brantford
Baden
Beeton
Burke's Falls
Blizzard Valley
Brudenell
Blind River
Bothwell
Blyth
Bridgeburg
Beamsville
Bowmanville
Blair
Beaverton
Bobcaygeon
Brechin
Belleville
Bracebridge
Berlin
Brockville
Bayfield
Caledonia
Chesterville
Carleton Place
Cumberland
Cumbermere
Calabogie
Casselman
Chatsworth
Cockburn Island
Canborough
Cataraqui
Chapleau
Cherry Valley
Clifford
Chelsey
Cobden
Cayuga
Cairo
Casterton
Castleton
Camilla
Dublin
D'Arcy
Dryden
Dunchurch
Dorchester Station
Deux Rivieres
Denbigh
Delaware
Dorland
Delta
Dunnville
Devlin
Elmvale
Eden Mills
Evanturel
Ethel
Emo
Emberson
Flinton
Fort Stewart
Franktown
Gordon
Glen Elbe
Glenmeyer
Grimsby
Gordon Lake
Green Bay
Griffith
Greensville
Glenalda
Gooderham
Haileybury
Hayburn
Hespeler
Hamilton
Harrowsmith
Highgate
Hastings
Huntsville
Hawkesbury
Hensall
Hillier
Hagersville
Holland Landing
Harrow
Havelock
Hintonburg
Hillview
Harriston
Kirkfield
Kingston
Katrine
Kingsville
Kagawong
Keewatin
Lansdowne
Lancaster
London
L'Orignal
Markdale
Mildmay
Maxville
Maynooth
Marmora
Midlothian
Millbrook
Morriston
Moonstone
Mt. Irwin
Minden
Milverton
Madoc
Murillo
McIntyre
Mt. Brydges
Napanee
Norwood
Norwich
North Gower
New Durham
New Dublin
North Bay
Omemee
Oakwood
Orangeville
Owen Sound
Orville
Ottawa East
Plantaganet
Port Dover
Port Rowan
Parham
Port Elgin
Port Colborne
Peterboro
Pinkerton
Perth
Picton
Pelee Island
Powassa
Pembroke
Parkhill
Port Arthur
Petrolia
Palmerston
Paisley
Rockwood
Ripley
Rossean
Rainy River
Slate River Valley
Sundridge
St. Thomas
Stayner
Sharbot Lake
Sandwich
Sutton West
Simcoe
Salem
St. Anne's
Sydenham
Sault Ste. Marie
St. Ola
Stirling
Stokes Bay
South Zorra
Sudbury
Stouffville
Southampton
Shelbourne
Tweed
Tara
Tory Hill
Thedford
Tottenham
The Brook
Thessalon
Thamesville
Tilbury
Toronto East
Uxbridge
Uffington
Vankleek Hill
Virgil
Virginia
Vittoria
Verner
Vankoughnet
Victoria Road
Wyoming
Wellington
Welland
Whitevale
Whitby
Wheately
Walkerton
Westport
Woodville
Wiarton
Woodstock
Walkerville
Woodslee
Waterdown
Webbwood
Waterford
York
Zurich

Remarks from Clerks.

Alviston.—Canning factory started. Good opening for the manufacture of vitrified brick; felt factory and wagon factory.

Alliston.—An implement factory has been established. Good opening for boot and shoe factory, woolen mill and sugar beet factory; also good opening for woodenware industry or any other industry to which the forest and farm are contributory. For instance, a factory for plows, harrows, wagons, etc.

Arnprior.—Good opening for a foundry. Large quantities of building sheathing paper is used throughout this section. A concrete dam is about to be built on the Masawaska river, and will supply electric power to manufacturers. A large factory has been built for the manufacture of shirts, etc., and also a factory for bottling and aerating Sanitaris mineral water. The Montreal Suspender Co. have built a large factory here and expect to employ 150 hands. The Campbell & Tough Scale Company, Limited, of Arnprior, started business here last year to manufacture scales for weighing live stock. Good opening for a machine shop and foundry.

Alfred.—The Ottawa Peat Co. have started pressing black muck into small rolls for fuel. Good opening for flour mill.

Antrim.—Splendid opening in the village of Galetta (this township) for flour mill and woolen factory. It is situated on the Mississippi River and the G.T.R. runs through it. Fine water power, and any industry requiring such would find here a desirable location.

Almonte.—Good opening for a foundry, furniture factory and also a carriage factory.

Ameliasburg.—Good opening for a canning factory.

Acton.—Shoe factory might do well, as all kinds of leather is prepared here by a manufacturer.

Aylmer.—Good opening for a pork factory. A cigar factory has been started.

Barrie.—Good opening for carpenter and planing shop.

Brighton.—Good opening for a boat building concern.

Bath.—Good opening for canning factory.

Bancroft.—Good opening for mining industries, as there are large quantities of minerals and granite, marble and mica. A rolling mill would do well here.

Brigden.—There has been established a stave and heading mill. Good opening for brick and tile yards.

Bruce Mines.—Opening for a chair factory saw mill, basket and veneer mill, and cheese and butter factories would do well here.

Brussels.—Cold storage plant has been established. Good opening for furniture factory, canning factory and condensed milk factory.

Byng.—Good opening for a brick kiln.

Buxton.—Opening for sugar beet factory.

Brantford.—The Brantford Felt and Rubber Co. has been established.

Baden.—A foundry should do well here.

Beeton.—Good opening for carriage factory and boot and shoe factory.

BURK'S FALLS.—Good opening for chemical works and also a tannery, as there is abundance of hemlock bark.

BLEZZARD VALLEY.—Good opening for a butter factory, as one would be of great benefit to the locality.

BRUDENELL.—Good opening for a grist mill, also blacksmith shop.

BLIND RIVER.—There has been established a machine shop and foundry. Splendid opening here for tannery, as there is abundance of tan bark in vicinity and communication excellent. A furniture factory would also do well here.

BOTHWELL.—Good opening for a canning factory.

BLYTH.—A foundry, a furniture factory, salt industry and a canning factory would all find good openings here.

BRIDGEBURG.—A planing mill would do well here.

BEAMSVILLE.—A basket factory, a fruit evaporator factory and canning factory would do well here.

BOWMANVILLE.—There has been a large addition built to the Bowmanville Foundry Co., also a new industry, known as the Durham Rubber Co.

BLAIR.—There is a good opening for any industry requiring cheap power' as there are two good water powers lying idle here close to G.T.R. station, and one mile from the C.P.R. station.

BEAVERTON.—Good opening for furniture factory. Good shipping point from two railways and from Trent Canal.

BOBCAYGEON.—Good opening for boat and canoe factory, have C.P.R. connection and municipal electric power plant.

BRECHIN.—Good opening for a grist mill, have G.T.R. and C.P.R., and James Bay Railway connections.

BELLEVILLE.—Fruit and vinegar factory has been established for the manufacture of all kinds of canned fruits, pickles, vinegar, etc. There are many good sites here at moderate figures for industries. The shipping facilities are excellent.

BRACEBRIDGE.—Any woodenware industry would do well here.

BERLIN.—The new industries established are: The Farwell Foundry Co., manufacture soil pipe and all kind of castings; planing and lumber mill, aluminum works for cooking utensils, broom factory. Good opening for any iron industry.

BROCKVILLE.—New industries established are: St. Lawrence Engine Works, for manufacturing motor boats and engines; The Shirreff Mfg. Co., manufacture wringers, etc.; Gilbert Boat Co.; The Brockville Mining Co. for preparing mica.

BAYFIELD.—Flour and chopping mill established. Good opening for flax mill and cement and tile works.

CALEDONIA.—Good opening for almost any industry, as the Niagara power will be available shortly. There is also good water power.

CHESTERVILLE.—Good opening for sash and door factory.

CARLETON PLACE.—New industries established are: General Electric Co. and Mica Splitting Co.

CALABOGIE.—Good opening for a grist mill, woolen mill, cheese and butter factory; also for stave or tub factory; have the best water power in the county of Renfrew and excellent railway facilities.

CUMBERLAND.—Good opening for a grist mill and saw mill.

CUMBERMERE.—Good opening for a shoemaker.

CASSELMAN.—Grist mill established. Good opening for brick yard.

CHATSWORTH.—Good opening for agricultural implement factory, furniture factory, cooperage, brick and cement yard.

COCKBURN ISLAND.—A saw mill has been established.

CANBOROUGH.—The Attercliffe Brick Company is established.

CATARAQUI.—A cheese factory has been established. Good opening for a canning factory.

CHAPLEAU.—An electric light plant for lighting the streets and houses has been established.

CHERRY VALLEY.—A mill for grinding feed has been established. Good opening for an industry for manufacture of apple barrels and cheese boxes.

CLIFFORD.—Good opening for planing mill.

CHELSEY.—Good opening for a chair factory.

COBDEN.—Good opening for a machinery repair shop, woolen mill; also for the manufacture of tile.

CAYUGA.—Good opening for a creamery; also a harness shop.

CAIRO.—Excellent opening here for a blacksmith shop.

CASTERTON.—Two saw mills have been established here. Good opening for creamery and cheese factory; also a furniture factory.

CASTLETON.—Good opening for a canning factory.

CAMILLA.—Saw mill and grain grinder established.

DUBLIN.—Excellent opening here for a creamery and cheese factory, as there is none within a radius of ten miles square.

D'ARCY.—A canning factory would do well here.

DRYDEN.—Any industry requiring strong power would find here a suitable location, such as a pulp mill or grist mill.

DUNCHURCH.—As the James Bay passes through here, any industry which could use our forest resources would do well.

DORCHESTER STATION.—A peat manufactory started. Good opening for a canning factory, also beet sugar factory.

DEUX RIVERIERS.—A saw mill has been started. Good opening for another saw mill in the neighborhood.

DENBIGH.—A cheese factory has been established. Good opening for a shoemaker.

DELAWARE.—Good opening for a fruit and vegetable canning factory.

DORLAND.—A canning factory would find here a good opening.

DELTA.—Good opening for a tub manufacturing business and canning factory.

DUNNVILLE.—Good opening for brick and tile factory, apple evaporator and vinegar works There is an abundant supply of natural gas to provide heat for this purpose, and the shipping facilities are good. A basket factory would also do well.

DEVLIN.—A small portable saw mill here. Good opening for a barrel stave and heading factory; also a pump factory. Good shipping facilities to Winnipeg and Kenora.

ELMVALE.—Good opening for a foundry, and also woollen mill.

EDEN MILLS.—Saw mill established.

EVANTUREL.—Good opening for a furniture factory, saw mill and handle factory, and woodenware factory.

ETHEL.—A cement tile factory has been started.

EMO.—Excellent opening for a live newspaper.

EMBERSON.—Saw mill started.

FLINTON.—A door, sash and blind factory would find here a good opening.

FORT STEWART.—Good opening for flour and saw mills.

FRANKTOWN.—Good opening for a shoemaker and carpenters. Quite a number of farm laborers could find steady employment, also girls as servants; in fact help of all kinds is scarce.

GORDON.—Good opening for a cheese or creamery factory.

GLEN ELBE.—A cheese factory has been established. Good opening for a grinding mill and a factory for cheese boxes.

GLENMEYER.—Good opening for brick, tile and cement works. Any industry for the manufacture of woodenware would do well, as there is abundance of timber here.

GRIMSBY.—The Walker Steel Range Co. established for the manufacture of stoves, ranges and agricultural implements.

GORDON LAKE.—Splendid opening for a general store-keeper and a first-class blacksmith shop.

GREEN BAY.—A butter factory or creamery would find here a good opening.

GRIFFITH.—Good opening for cheese factory.

GREENSVILLE.—A quarry has been opened for quarrying and crushing stone for roads and for shipping to smelting works in Hamilton.

GLENALDA.—Two saw mills have been established. Any wooden ware industry or a woollen mill would find good water power here.

GOODERHAM.—Good opening for a carding and woollen mill.

HAILEYBURY. — Lumber mill, electric light plant, and several mining companies have been established. Any industry using spruce, cedar, etc., would find a good opening here, such as sash and door factory or furniture.

HAYBURN.—A canning factory for canning corn, tomatoes, fruit, etc., might pay here, as there is good shipping facilities by water.

HESPELER.—Iron working industries are wanted. Good sites and good terms. G. T. R. and C. P. R. connections at the door.

HAMILTON.—Almost any industry requiring good facilities, low taxes and cheap land would find it to their advantage to look over the N.E. part of Barton township.

HARROWSMITH. — A saw and shingle mill, also cheese box factory established. Canning factory would do well, also a brick and tile industry.

HIGHGATE.—A canning factory will doubtless prove a paying industry, and it is probable the township would give free taxes for ten years to any thriving industry.

HASTINGS.—Good opening for boot and shoe factory, furniture factory, carriage factory and woollen mills. In fact anything needing good water power.

HUNTSVILLE.—Good opening for cheese factory, and poultry farm on a large scale. This is a centre for tourists during the summer months and the demand for eggs and poultry is large.

HAWKESBURY.—Good opening for foundry, also any wood-working industry that could use the cuttings from logs into boards. This material is now shipped to the United States.

HENSALL.—Good opening for knitting factory and carriage factory.

HILLIER.—Good opening for barrel factory ; also canning factory.

HAGERSVILLE.—Saw mill and planing mill started. Good opening for lumber yard and sash and door factory.

HOLLAND LANDING.—Splendid opening for manufacturing of any kind. Free sites and exemption from taxes.

HARROW.—Good opening for canning factory.

HAVELOCK.—A cheese factory has been established. Good mining country.

HINTONBURG.—This village has excellent railway facilities, a number of suitable building sites and an A1 water supply. Any industry using steam or electric power should find here a desirable location.

HILLVIEW.—Two new saw mills and shingle mill have been established.

HARRISTON.—Stove foundry established.

KIRKFIELD.—Condensed Peat and Fuel Company established, a stone crusher, cheese and butter factory, and also stair factory.

KINGSTON.—Kingston is unsurpassed as a locality for industries on account of its splendid rail and water shipping facilities; lead smelting plant should flourish here, and when these are established industries requiring iron and lead as their raw material, would find here a desirable location.

KATRINE.—Saw mill has been established. Good opening for grist mill.

KINGSVILLE.—Cigar manufactory established. Good opening for a canning and tobacco factory.

KAGAWONG.—A bakery has been established. Good opening for a creamery and cheese factory, woollen mills, grist mill, cement and brick industries and pulp mill.

KEEWATIN.—Flour mills have been established. Opening for almost any industry as there is here one of the best water powers in Canada.

LANSDOWNE.—Provender mills started. A brick and tile yard would find here a good opening.

LANCASTER.—Good opening for a foundry. There is a large brick building suitable for a machine shop.

LONDON.—The Murray Shoe Company, glove and mit factory, and fence company are new industries that have been established. Good openings for canned goods factory, sugar factory, cold storage, agricultural implement industry, machine tool shop, glue factory, etc.

L'ORIGNAL.—Good opening for saw mills or any industry for handling hard and soft woods.

MARKDALE.—There is good water power in this vicinity and any wood-working concern would do well; also a foundry and repair shop.

MILDMAY.—Good facilities for making brick and tile. Good water power.

MAXVILLE.—The Maxville Bedding Co., wholesale and retail trade. Good opening for grist mill.

MAYNOOTH.—Good openings for woollen mill, roller mill and mining industry.

MARMORA.—Good opening for any industry connected with lumbering, also for the manufacture of articles requiring hardwood.

MIDLOTHIAN.—Good opening for a sawmill.

MILLBROOK.—A canning factory would do well here.

MORRISTON.—Good opening for carriage factory and blacksmith shop.

MOONSTONE.—Good openings for saw mill, cheese factory and brickyard.

MT. IRWIN.—Good opening for a cheese factory.

MINDEN.—A butter factory has been started. Good opening for urniture factory.

MILVERTON.—The J. G. Grosch Felt Shoe Company have started business. Good opening for foundry, woollen mill, sash and door factory. Good shipping facilities on the main line of the C.P.R., G.T.R. and Guelph and Goderich line.

MADOC.—Cheese box factory, barrel factory and canning factory would find here good openings.

MURILLO.—Power company established for transmitting power to Port Arthur and Fort William.

MCINTYRE.—A factory for the manufacture of cement and concrete blocks has been established.

MT. BRYDGES.—Canning factory would do well here.

NAPANEE.—A canning factory has been established. There is room for other canning factories as there is a large district here suitable for raising small fruits, etc. The present factory cannot put up all the fruit delivered.

NORWOOD.—Good opening for a broom factory, or any woodenware industry.

NORWICH.—A manufacturing business of any kind using hardwood would find suitable conditions here.

NORTH GOWER.—Good opening for a sash and door factory. An electric railway between here and Ottawa would be a great success.

NEW DURHAM.—An industry for the manufacture of sewer pipe and cement blocks has been established.

NEW DUBLIN.—There is a good opening here for the manufacture of drain tile and brick.

NORTH BAY.—Two sawmills and a brick yard have been started. Good opening for flour and pulp mills, tannery and furniture factory. Any industry established here would command the markets of New Ontario.

OMEMEE.—An industry for the making of cement blocks for building purposes and tile for culverts and drains has been started. Good opening for sawmill and shingle mill.

OAKWOOD.—Good opening for a tailor shop and also a shoemaker shop.

ORANGEVILLE.—Good opening for a boot and shoe factory.

Owen Sound.—A woodenware factory has been established for the making of tubs, pails, etc., out of pulp, also a large lime kiln.

Orville.—Good opening for woodworking machinery industry.

Ottawa East.—The Ottawa Lumber Company have established a planing mill. Water power excellent, and any industry might do well here.

Plantaganet.—A brickmaking industry has been started. Good opening for lime kiln, grist mill and canning factory.

Port Dover.—Good opening for brick yard, planing mill, sash and door factory, smelting works, glass factory and moulding factory. Good shipping facilities by rail and water.

Port Rowan.—A planing mill, house building and general woodworking industry has been established. Good opening for a canning factory.

Parham.—Good opening for a shoemaker.

Port Elgin.—A lumber mill and an industry for the manufacture of shovels and steel goods have been established. Good opening for sash and door factory, box factory and a pail and tub factory.

Port Colborne.—Cigar manufactory established.

Peterboro'.—An industry for the manufacture of brick and tile, also a carpet factory have been established.

Pinkerton.—Good opening for the manufacture of woodenware, such as tool handles, etc.

Perth.—A chemical laboratory has been started here.

Picton.—Good opening for a pickle factory, fruit evaporating and canning factory.

Pelee Island.—Good opening for tobacco, canning and starch factories.

Powassan.—A sash and door factory has been established. Good openings for woollen factory, furniture factory, tannery and chemical works.

Pembroke.—Machine shop and sawmill started. Good opening for a boot and shoe industry and woodenware factory.

Parkhill.—Two sawmills have been established.

Port Arthur.—An industry for the manufacture of various kind of brick, a live stock company for feeding sheep and sheep-ranching, a blast furnace and coal and ore docks have been established. Good opening for a match factory, woodenware industry, woollen mills and washing machine manufactory.

Petrolia.—Good opening for planing mill, machine shop and canning factory.

Palmerston.—Good opening for a grist mill.

Paisley.—Pork packing industry started; also a brick and tile yard.

Rockwood.—Good location for a lumber and planing mill. Excellent water power.

Ripley.—Good opening for the manufacture of cement blocks, tile, etc., also for the manufacture of farm implements; carriage factory. Excellent shipping facilities by rail or water.

Rosseau.—A saw and planing mill started.

Rainy River.—Good opening for sash and door factory.

Slate River Valley.—Saw mill and large dairy have been established.

SUNDRIDGE.—Good opening for any woodenware manufactory.

ST. THOMAS.—A factory for making ladies' cloaks, etc., has been established.

STAYNER.—Good opening for canning factory.

SHARBOT LAKE.—Good opening for flour mill.

SANDWICH.—Good opening for any industry which requires water frontage. Best shipping facilities in Ontario.

SUTTON, WEST.—Good opening for a woollen mill or cement block factory.

SIMCOE.—A tanning and fur dressing company has been established. Good opening for the manufacture of tin cans for canning industry and wood-working industry. Good opening for beet sugar factory, broom factory, flax mill and cement, tile and brick factory.

SALEM.—A packing house has been established. Good water power lying idle.

ST. ANN'S.—A saw and planing mill with sash and door factory, also a general lumbering business, have been established.

SYDENHAM.—Good opening for a brickmaking industry.

SAULT STE MARIE.—Good opening for a chair factory and any industry using wood, both hard and soft.

ST. OLA.—A cheese factory has been established.

STIRLING.—A barrel factory has been started.

STOKES' BAY.—Good opening for any woodenware industry or furniture factory.

SOUTH ZORRA.—Saw mill and grain shipping business established. Good opening for a foundry and machine shop.

SUDBURY.—Good opening for a woodworking industry, foundry, and the manufacture of farm implements.

STOUFFVILLE.—Good opening for canning factory or pickle factory.

SOUTHAMPTON.—Good opening for grist mill and saw mill.

SHELBOURNE.—A planing mill has been started.

TWEED.—The American Madoc Mining Co. established. Good opening for canning factory.

TARA.—Good opening for a woollen mill, as there is good water power with mill partly idle. Good local trade, as well as the manufacture of domestic goods. Splendid farming section, with abundance of wool marketed here.

TORY HILL.—Saw mill started. Minerals found.

THEDFORD.—A cheese factory might do well here.

TOTTENHAM.—A cement block industry has been established. Now that the C.P.R. and the G.T.R. railways are completed there will be openings for almost any industry.

THE BROOK.—A blacksmith shop has been started.

THESSALON.—Good opening for a tannery, also a veneer, chair and general furniture factory, including boxes, tool handles, etc.

THAMESVILLE.—Good opening here for a pork-packing industry, a flax mill, cannery, or any wood manufacturing industry.

TILBURY.—An industry for the manufacture of Turbine engines established; one of the largest canning factories in Canada started; also cement block works and a sash and door factory. Good opening for butter and cheese factory, pork-packing industry, soap factory and broom factory.

TORONTO (EAST).—The East Toronto Cement Company, also planing mill have been established.

UXBRIDGE.—This town is well situated to supply a cannery, as the best of small fruits and vegetables are produced; could also support a good butter and cheese factory. Good situation for another tannery.

UFFINGTON.—Two good water powers that could be utilized.

VANKLEEK HILL.—Any industry where water power is not required w. find here a good opening.

VIRGIL.—Good opening for a fruit canning industry.

VIRGINIA.—Splendid water power in the neighborhood. Good opening for foundry, woollen or woodenware factory. The James Bay R'y, which is just building, runs through the place. Splendid facilities for shipping.

VITTORIA.—Planing mill established. Good opening in this locality for canning factory or evaporator.

VERNER.—A good opening for butter factory.

VANKOUGHNET.—There is abundant iron in this section which might be worked profitably.

VICTORIA ROAD.—New creamery established; also an industry for the manufacture of cement, situated at Raven Lake, about two miles from here. A good bakery would do well here.

WYOMING.—Good opening for canning factory and evaporator; also a flax mill.

WELLINGTON.—A canning factory has been established, and brick works for the manufacture of bricks out of sand and cement.

WELLAND.—The following industries have been established: The Plymouth Cordage Company, Ontario Iron and Steel Company, Falls Power Company, and the Erie and Ontario Dredging Company. Best opening on earth for anything requiring every railroad in Canada, deep water connection, cheap electric power, natural gas, low taxes and cheap land. Iron industries especially attracted.

WHITEVALE.—Good opening for a wood-turning establishment to take the place of one destroyed by fire three years ago. Water power available.

WHITBY.—Splendid opening for any kind of manufactories, owing to good railway and water communication. Small industries preferred, employing 50 hands or under. A woodworking industry could not find a better situation. No better location in Canada for a sugar beet factory. Electric light and water power operated by town.

WHEATELY.—Butter factory established. Good opening for cheese factory; also sash and door factory.

WALKERTON.—Good opening for biscuit and confectionery business, brush factory, canning factory, foundry and machine shop. There is a reasonable amount of water power undeveloped.

WESTPORT.—A mica mine is being developed. There is a building in the township fitted up for malleable iron works, which has been idle for nearly two years owing to lack of money to carry on the business. This building could easily be converted into a woollen mill. Good water power available.

WOODVILLE.—An industry for the manufacture of farm implements is much needed.

WIARTON.—Good opening for a woodworking industry; also Portland cement industry.

WOODSTOCK.—Industries established: Standard Fence Company, Eureka Plant Company, Canadian Fence Manufacturing Company and two cement block manufacturing companies. From the location, the railway facilities and the city owning the works and the electric light power plant, this town affords the very best position for almost any manufacturing industry, large or small.

WALKERVILLE.—The Imperial Rattan Company, for the manufacture of chairs, etc., also a plumbing business have been established. Good facilities here for the establishment of car works.

WOODSLEE.—Brick yard started. Good opening for a creamery; a tile plant is also needed, as farmers are beginning to tile their land, and as freight rates are high tile should be manufactured at home. There is an abundance of good clay for the purpose.

WATERDOWN.—Good opening for a creamery or cheese factory; could be built near a permanent creek with plenty of spring water. There is also the frame of an old saw mill which could easily be fitted up for the purpose. Eight miles from Hamilton on main road.

WEBBWOOD.—The White Pine Lumber Company has been established, operating about six miles from the town. A splendid water power about two miles out could easily be utilized for sawmill, planing or veneer mill, or other industry.

WATERFORD.—Good opening for machine and repair shop or for almost any industry. Good shipping facilities by rail.

YORK.—There is a great quantity of stone that has been tested and pronounced superior for the manufacture of the finest glass. There is also a splendid gas field, judging from wells drilled on the border of the township; also from two in the township.

ZURRICH.—A planing mill and sash and door factory would find here a good opening, also canning factory. The railway facilities might be better. Are anxious for the C.P.R. to go through the village.

The following questions, which refer to the year ending December 31st, 1905, were sent to the labor organizations in May, 1906, for answer thereto.

1. Location
2. Trade or calling
3. Title of organization
4. Date organized
5. Total membership, male female
6. Average earning per week, male female
7. No. of working hours first five days
8. No. of working hours Saturday
9. Wages paid weekly fortnightly monthly
10. Average number of days idle per member during year
11. General cause of idleness
12. Total number employed at your business in your locality, male female
13. What difference in wages or hours of labor (if any) of those engaged in your business in your locality, between members and non-members of your organization
14. What cash benefits, if any, are paid in case of (*a*) lack of employment
    (*b*) Sickness (*c*) Death
    (*d*) Superannuation
15. Do you carry on any special work for members, such as a reading room, evening classes, etc.
16. Name of President for current term
    Address
17. Name of Corresponding Secretary for current term
    Address
18. Nights of meeting

Organization formed since December 31st, 1905, are requested to return Schedule, answer as many questions as possible, so that the Bureau's Directory of Labor Organizations may be complete.

RETURNS IN DETAIL OF LABOR ORGANIZATIONS.

Algoma Mills.

Name,—Maintenance of Ways Employees, No. 491. Title of organization, I. B. M. of W. E. Organized May, 1904; total membership, 35; average earnings per week, foremen, $12; men, $8.70; number of working hours first five days, 50; number on Saturday, 10; wages paid monthly; total number employed at same calling in your locality, 7; President W. Hall, Dean Lake P. O. Corresponding Secretary, W. Jenkes, Dean Lake P. O; meets last Saturday each month.

Brockville.

Name,—Order of Railway Conductors, No. 366. Organized Feb. 28th 1894; total membership 31; wages paid monthly, about $75; slow movement of freight cause of idleness; cash benefits in case of death $1.000 to $5,000, total in event of loss of hand or foot; President, Adam Young box 642, Brockville; Corresponping Secretary, R. McConachie, box 533, Brockville. Night of meeting, first Sunday in month.

Name,—Tailors' Union, No. 262. Organized January, 1901; total membership, male 10; female, 12; average earning per week, male, $8; female, $4; number of working hours per full week, 60; weekly wages; average number of days idle per member during year, 60; total number emyloyed at trade in locality, male 17, female 18; no difference in hours of labor between members and non-members of organization, but members of organization receive 10 per cent more wages than non-members; President, Chas. Cato, Brockville; Corresponding Secretary, David Muirhead, box 40, Brockville; meets second Monday each month.

Name,—United Brotherhood of Carpenters and Joiners of America, No. 799. Organized Aug. 30th, 1900; total membership, 39; average earnings per week, $13.50; number of working hours per day for full week, 10; average number of idle days per member during year, 60; total number employed at trade in locality, 55; non-union members work 10 hours per day and receive five cents per hour less than union men. Benefits in case of death, $200. President, F. W. Chow, King St. west, Brockville. Cor. Sec, E. J. Byrne, King St. west, Brockville. Meets every Thursday.

Name,—Bricklayers, Masons and Plasterers, No. 130. Organized Sept. 2nd, 1900; average earnings per week, $18; full week's work, 54 hours; total number employed at trade in locality, 30; union labor is paid 75 cents per day on an average more than non-union. President, John Burnston, Brockville. Cor. Sec., G. L. Barclay, Box 74, Brockville. Meets every alternate Wednesday.

Brantford.

Name,—International Association of Machinists, No. 564. Organized March 20th, 1903; total membership, 45; average earnings per week, $13.50; number of working hours per day for first five, 50; on Saturday, 9, except in June, July and August, when 10 obtains; average number of idle days per member during year, 10, general cause of idleness, sickness or accidents; total number employed at trade in locality, about 30. Benefits in case of death, $50

to $200; superannuation, $1,000 if 68 years of age and 20 consecutive years in good standing, $500 if 65 years of age and 10 years in good standing. President, Wm. Foster, 120 Eagle Ave., Brantford. Cor. Sec., Fred Jones, 208½ Chatham St., Brantford. Meets first and third Thursdays.

Name,—Bricklayers and Masons, No. 9. Total membership, 60; average earnings per week, $12; number of working hours per first five days, 45; Saturday, 5 hours; wages paid weekly; average number of days idle per member during year, 70; unseasonable weather cause of idleness; total number employed at trade in locality, 65; non-union members work 10 hours per day. President, M. J. Carson, 188 William St. Cor. Sec., N. J. Kerr, 136 William St. Brantford. Meets alternate Thursdays.

Name,—International Barbers' Union, No. 298. Organized March 28th, 1901; total membership, 25; average earnings per week, $10; number of working hours first five days, 50; on Saturday, 14 hours; total number employed at calling in locality, 40. Benefits $5 per week in case of sickness, $60 to $500 in case of death. President, Frederick Hamel, Brantford. Cor. Sec., Edward Rice, 5 George St., Brantford. Meets last Thursday in month.

Name,—International Brotherhood of Painters and Decorators of America, No. 93. Organized March 30th, 1901; total membership, 20, average earnings per week, $11.50; number of working hours per day, 9; weekly wages: total number employed at trade in locality, 20; 15 cents per hour paid members of union more than non-members. President, Alex. Warrick, 146 Pearl St., Brantford. Cor. Sec., C. H. Jones, 93 Arthur St., Brantford. Meets alternate Mondays.

Name,—Plasterers' International Association, No. 164. Organized April 9th, 1900; total membership, 10; average weekly earnings, $11; number of working hours per week, 54; weekly wages; average number of idle days per member during year, 100; cause, unsuitable weather; total number employed at trade in locality, 15; non-union members receive five cents per hour less, and one cent less on the yard piecework, than members of organization. Benefits in case of death, $50. President, Thos. Jennings, 83 Erie Ave. Cor. Sec., James Patterson, 20 Jarvis St., Brantford. Meets second Tuesday in month.

Name,—Brantford Typographical Union, No. 378. Organized June, 1900; total membership, 20; average weekly earnings, $12; number of working hours per day, 8; total number employed at trade in locality, 30. Benefits in case of death, $85. President, Ira D. Scruton, Brantford. Cor. Sec., Roy Sayles. Meets fourth Saturday in month.

Berlin.

Name,—Amalgamated Woodworkers' International Union of America, No. 275. Organized March, 1900; total membership, 13; average earnings per week, $10; working hours per day for first five days, 10; Saturday, from June to September, 5 hours; wages paid fortnightly; two months' idle time per member during year; total number at trade in locality, 1,000; difference in wages between members of organization and non-members, six per cent. in favor of former. Benefits in case of death, $250. President, W. J. Heimbecker, Berlin. Cor. Sec, J. H. Heimbecker, Box 150, Berlin. Meets alternate Tuesdays.

Name,—Federal Labor Union, No. 17. Organized April 9th, 1901; total membership, 68; average earnings per week $9.60; 10 hours per day for five, and nine on Saturday; average of seven months idle during year; number employed at calling in locality, 160. President, Jos. Fraiser, Box 218, Berlin. Cor. Sec, Albert Schwarz, Box 208. Meets first and third Thursdays.

Name,—United Brotherhood Carpenters and Joiners of America, No. 553. Organized April 14th, 1901; total membership, 90; average earnings per week,

$12.25; number of working hours first five days, 50; on Saturday, nine hours; wages paid fortnightly; average number of idle days per member during year, about two months; cause of idleness, unseasonable weather; average number employed at trade during year, about 150; members of organization receive about 25 cents per day more than non-members. Benefits—sickness, amount is kept up; in case of death, $50; superannuation, $100 to $200. President, C. F. Brandt, Waterloo. Cor. Sec., J. Braniff, Waterloo. Meets first and third Fridays in month.

Name,—Bricklayers', Masons' and Plasterers' Union of America, No. 12. Organized March 17, 1900; total members, 87; average earnings per week, $21.60; working hours, 9 per day; wages paid weekly; idle days caused by inclement weather; total number at trades in locality, 87. President, Lea Steckley, Berlin; Cor. Sec., Jacob E. Cook, 11 Church St., Berlin. Meets each Friday.

Collingwood.

Name,—United Brotherhood of Carpenters and Joiners of America No. 1583. Organized April 19th, 1903; total membership, 60; average earnings per week, $—; number of working hours per day, 10; average number of idle days per member during year, about 60; total number employed in locality, about 200 Organization was means of procuring raises in wages which non-union men participated. Benefits in case of death of wife, $50; death of husband, $200; total disability, up to $400. President, S. Paiks, Collingwood; Cor. Sec., J. W. Buffey, Box 659 Collingwood. Meets second and fourth Thursdays.

Name,—Bricklayers', Masons' and Plasterers' International Union, No. 19. Organized Sept. 6th, 1902; renamed March 1906; total membership, 27; number working hours per week, 54; wages paid fortnightly; average number of days idle per member during year, 8 months; difference in wages and hours—non-union men, 10 hours per day at $3; union men, 9 hours per day at $3.60. President, Geo. B. Draper, Collingwood; Cor. Sec., Edward Chamberlain, Box 769, Collingwood. Meets first and third Wednesdays.

Name,—Journeymen Barbers' International Union, No. 528. Organized May 23rd, 1903; total membership, 11; number working hours first five days, 50; on Saturday 14 hours; average earnings, $10; paid weekly; idle days per member during year, 9; cause, public holidays; total number employed in locality, 18; benefits, $5.00 per week for 20 weeks; in case of death, $75 to $500, according to time of membership. President, Wm. Passlow, Collingwood; Cor. Sec., Fred Bollen, Box 536, Collingwood. Meets first Monday in month.

Chapleau.

Name,—Grand International Brotherhood of Locomotive Engineers, No. 319. Organized January, 1887; total membership, 37; average earnings per week, $30; wages paid monthly; idle time caused by fluctuation of traffic; total number employed at calling in vicinity, 40; benefits: have insurance, superannuation, $20 and in some cases $25 per month; possess a reading room. President, A. A. McLearn, Chapleau; Cor. Sec., J. D. McAdam, Chapleau. Meets first and third Mondays.

Chatham.

Name,—Bricklayers' and Masons' Union, No. 18. Organized June 28th, 1902; total membership, about 18; average earnings per week of 54 hours, $16; wages paid weekly; average time idle per member during year, six months;

cause of idleness, bad weather and scarcity of material; union men's wages, 40 cents per hour; non-union, 10 hours per day; wages range from 15 to 35 cents per hour. President, Joseph Handysides, Chatham; Cor. Sec., Joseph Westmor, Chatham, Meets Tuesday.

Carleton Place.

Name,—Brotherhood Railway Carmen of America, No. 229. Organized January 6th 1903; total membership, 50; average earnings per week, $11; number working hours first five days, 50; on Saturday, 5 hours; wages paid monthly; average number of idle days per member during year, 22; cause of idleness, holidays; total number employed at trade in locality, 32; non-union members do not receive pay above flat rate they start at President, J. D. McLaren, Carleton Place; Cor. Sec., James H. New, Carleton Place. Meets first and third Thursday in month.

Name,—Stovemounters' and Steel Range Workers' International Union, No. 78. Organized, April 1st., 1905; total membership, 7; average earnings per week, $14; number working hours per week, 60, except July and August, when 5 hours obtain on Saturday; average number of days idle per member during year, 30; cause of idleness, stock-taking and repairs; number of men employed at trade in locality, 7, all members; wages paid monthly; all piecework; benefits—Out-of-work, $5 per week for three months; in case of death, $100. President, S. C. Waugh, Carleton Place; Cor. Sec., R. P. Dryman, Box 327, Carleton Place. Meets second and fourth Thursdays.

Name,—Iron Moulders' Union, No. 362; total membership, 28; average weekly wages, $20; number of working hours first five days, 50; number of working hours Saturday, 10; total number employed at trade in locality, 30; benefits—Sickness, $5.25 per week; in case of death, $150. President. Jas. Carson, Carleton Place; Cor. Sec., T. S. Leger, box 360, Carleton Place. Meets first and third Thursdays.

Dundas.

Name,—Iron Moulders' Union of N. A., No. 269. Organized Feb. 17th, 1900; total membership, 34; average earnings per week, $14.50; number working hours first five days, 50; on Saturday, 5 hours; wages paid fortnightly; total number at trade in locality, 32; benefits—Sickness, $5.25 per week; in case of death, $100 to $200. President, Thos. Franey, Dundas; Recording Sec., William Watts, box 315, Dundas. Meets second Tuesday in month.

Fort William.

Name,—Brotherhood Locomotive Firemen. Organized July 9th, 1884; total membership, 50; average earning per week, $20; number of working hours per week, no specified number; wages paid monthly; cause of idleness, dull time; total number at trade in locality, 50; benefits—death insurance; total disability or in case of death full amount of insurance, $500 to $3,000 is paid; same insurance not carried by all. Master, A. W. Primer, Fort William; Cor. Sec., A. E. Grant, Box 65, Fort William. Meets each Wednesday.

Name,—Typographical Union, No. 471. Organized July 1st, 1905; total membership, 8; average earnings, $14 per week of 54 hours; weekly wages; total number at calling in locality, 22 men, 2 females; benefits—Death fund of $70 President, A. M. Frank, Port Arthur; Cor. Sec., A. J. Hutton, Box 48, Fort William. Meets last Saturday in month.

Fort Frances.

Name,—International Order Maintenance of Ways Employees, No. 13. Total working hours per week, 60; average earnings from $1.50 to $2.50 per day; total number at calling in locality, about 150. Benefits optional with organization. President, J. T. Wilson, St. Lewis, Fort Francis; Cor. Sec., C. Boyle, Bonviot Buildings, St. Lewis, Fort Francis. Meets on call of President.

Galt.

Name,—International Journeymen Barbers' Union of America, No. 413. Organized June, 1902; total membership, 8; average earnings per week, $10; number of working hours: first five days, 60, number on Saturday, 15; wages paid weekly; average number of days idle per member during year, legal holidays. except when such fall on Saturday; total number at trade in locality, 15. Benefits sickness, $5 per week; in case of death, $50. President, Robt. Wylie, Main St., Galt; Cor. Sec., Jas. A. Allen, Water St., Galt. Meets last Thursday in month.

Name.—United Brotherhood Carpenters, No. 1216. Organized 28th July, 1902; average earnings per week, $13.50; number working hours, first five days, 50; on Saturday, 5 hours; total number employed at trade in locality, 63; non-members earn about $12 per week. Benefits, in case of death, $200 to $400. Are starting a class of instruction on steel square. President, Robert Lothing, Hespler; Recording Sec., Joseph W. McLeod, Galt. Meets every alternate Monday.

Guelph.

Name.—Brussels Carpet Weavers' Union, No. 277. Organized Sept., 1900; total membership, 13; average earnings per week, $8; number working hours, first five days, 50; on Saturday, 5 hours; wages paid fortnightly; cause of idleness, want of orders; total number employed at trade in locality, 15. President, Thomas Holyman, Guelph; Recording Sec., Matthew T. London, Queen Street, Guelph. Meets second Monday in each month.

Name,—Piano, Organ and Musical Instrument Workers' Union, No. 34. Total members, 150; average earnings per week, $12; number working hours, first five days, 50; on Saturday, 5 hours; average number of days idle per member during year, 75; total number employed at trade in locality, 250 (including boys and men). Benefits, Sickness, $5 per week; in case of death, $50 to $200. President, Jas. E. Norris, Guelph; Cor. Sec., Frank T. Howard, Box 787, Guelph. Meets 1st and 3rd Thursdays.

Name,—Journeymen Barbers' International Union of America, No. 310. Organized June 4th, 1901; total membership, 26; average earnings per week, $11: number working hours, first five days, 50; on Saturday, 14 hours: wages paid weekly; total number employed at trade in locality, 40. Benefits, sickness $5 per week; in case of death, $60 to $500. President, Ed. Wilson, Macdonell St., Guelph; Cor. Sec., W. H. Fairley, Box 9, Guelph. Meets last Tuesday in month.

Hamilton.

Name,—Musical Protective Association, No. 293. Organized April 9th, 1903; total membership, male 175, female 5; President, Frank Evans, 61 McGill St., Hamilton; Recording Sec., Jos. Gimblet, 112 Caroline St. N., Hamilton. Meets 2nd Sunday in Month.

Name,—International Broom and Whisk Makers' Union, No. 9. Organized May 15th, 1900; total membership, 20; average earnings per week, $13.50; number working hours, first five days, 50; on Saturday, 5 hours; wages paid weekly; average number of idle days per member during year, 15; total number employed at trade in locality, 20. President, Walter R. Rolls, 288 Victoria Avenue, Hamilton; Cor, Sec., W. H. McAdam, 82 Vine St., Hamilton. Meets 2nd and 4th Monday.

Name,—Boot and Shoe Workers' Union, No. 228. Total membership, 60; total number working hours, first five days, 50; on Saturday, 5 hours; wages paid weekly; average number idle days per member during year, about 30; total number employed at trade in locality, 150 men and about 100 women; benefits, sickness, $5 per week for thirteen weeks; in case of death, $50 to $100. President, Joseph J. Gimblet, 112 Caroline St. N., Hamilton; Cor. Sec., A. W. Charlesworth, 269 Robert St. Meets 2nd Tuesday in month. Sick benefit clubs in factory which pay $3 a week for 13 weeks, and $30 at death, under control of Union.

Name,—Hamilton Typographical Union, No. 129. Organized Sept., 1869; total membership, 93; average earnings per week, $14; number of working hours, first five days, 43¾; on Saturday, 4¼ hours; total number employed at trade in locality, 93; benefits in case of death, $70. President, Chas. I. Aitchison, Hamilton; Cor. Sec., John J. Burns, 230 John N., Hamilton. Meets 2nd Saturday in month.

Name,—Journeymen Barbers' International Union of America, No. 131; Organized Nov. 8, 1900; total membership, 73; average earnings per week, $11.50; number of working hours per day, first five days, 10½; on Saturday, 14½ hours; wages paid weekly; total number employed at trade in locality, about 120; non-members work later than members; benefits, sickness, $5 per week. President, Chas. Heywood, Hamilton; Cor. Sec., W. A. Solfora, 59 John St. Meets 1st and 3rd Monday.

Name,—International Tobacco Workers' Union, No. 48. Organized 7th Sept., 1899; total membership, men, 90; females, 68; average earnings per week, male, $10; female, $5; number of working hours, first five days, 50; on Saturday, 5 hours; wages paid weekly; total number employed at trade in locality, men, 90; females, 68; average number of days idle per member during year, 36; benefits, sickness, $3 per week; in case of death, $50. President, B. O'Reily, 74 Locomotive St., Hamilton; Recording Sec., Jas. Ogilvie, 34 Simcoe St., Hamilton. Meets 2nd and 4th Monday.

Name,—United Brotherhood of Carpenters and Joiners of America, No. 18. Organized August 1st, 1881; total membership, 110; average earnings per week, $14; number working hours, first five days, 45; on Saturday, 5 hours; wages paid part fortnightly and part weekly; total number employed at trade in locality, 300; members receive 30c. per hour, non-members 25c. per hour; benefits, sickness, free doctor; in case of death, $200, after one year's membership; President, William Perry, 33 Erie Avenue, Hamilton; Cor. Sec., James Calvert, 102 Ray St. South, Hamilton. Meets 1st and 3rd Tuesdays. Remarks—Amalgamated are organized, with about the same membership.

Name,—Bricklayers' and Stonemasons' Union, No. 1. Total membership, 300; number working hours, first five days, 54; on Saturday, 5 hours; wages paid fortnightly; benefits, in case of death, $100; have reading room and games in winter season. President, W. Rowe, Wood St., Hamilton; Cor. Sec., A. J. Seymour, 7 John St. N., Hamilton. Meets each Tuesday.

Name,—Ironmoulders' Union, No 26. Organized 1869; average earnings per week, $15.90; number of working hours first five days, 50; on Saturday

9 hours; wages paid weekly, fortnightly and monthly; average number idle days during year, 30; total number employed at trade in locality, 450; 65c. per day more paid members than non-members; President, T. H. Church, Cor. Pearl and Napier Sts. Hamilton; Recording Secretary, W. L. Lucas, 82 Leaming St. Hamilton; meets every Wednesday.

Name,—Painters, Paperhangers and Decorators Union No. 205. Organized May 15th, 1887; total membership 80; average earnings per week, $15; number of working hours first five days, 40; on Saturday, five hours; wages paid weekly; average number idle days per member during year, 40; total number employed at trade in locality, 152; from 7½c. to 10c. per hour in favour of members of Union; President, John Preston, 23 Walnut St. North, Hamilton; Corresponding Secretary, A. J. Somerville, 368 Jackson St. West, Hamilton.

Name,—United Garment, Cutters and Trimmers, No. 23. Organized March 6th, 1903; average earnings per week, $11.75; number working hours first five days, 45; on Saturday, 4½ hours; wages paid fortnightly; total number employed at trade in locality, 150; President, Richard Jose, 416 Aberdeen Ave., Hamilton; Corresponding Secretary, R. J. Ferguson, 11 Elgin St., Hamilton; meets 1st Thursday in month.

Name,—Printing Pressmen and Assistants' Union No. 176. Organized Nov. 5th, 1904; total membership, 32; average earnings per week (Pressmen) $14.85, Assistants, $10, Feeders, $7; number of working hours first five days, 45; Saturday, 4 hours and 50 min.; wages paid weekly; number employed at business in locality, about 40; special work for members; a committee is working on plans for the formation of a library; President, A. W. Wilks, 185 Sanford Ave., Hamilton; Corresponding Secretary, Wm. R. Berry, 158 Market St., Hamilton; meets 4th Friday in month.

Name,—Women Stitchers' International Union No. 234. Organized Nov., 1900, total membership, 70; average earnings per week $4; number working hours first five days, 50; Saturday 5 hours; wages paid weekly; average number days idle per member during year, week to 10 days; cause of idleness, stocktaking; benefits, sickness, $5 per week, death, $50; President, Miss Lizzie Catlin, 71 William St., Hamilton; Corresponding Secretary, Miss Mary Sheppard, 62 Alanson St., Hamilton: meets 4th Thursday in month.

Name,—International Brotherhood Bookbinders of America, No. 114. Organized April 18th, 1901; total membership, 14; average earnings per week, $13; number working hours first five days, 50; Saturday 5 hours; total number employed at trade in locality male 20; female 40; cash benefits, death $50; President, W. R. Crockett, 17 Evans St, South, Hamilton; Corresponding Secretary, Llewellyn Thomas, 55 West Ave., South, Hamilton.

Name,—Amalgamated Society Carpenters and Joiners, No. 819. Organized June, 1860; total membership, 69 to 416; average earnings per week, $14; number working hours first five days 45; Saturday 5 hours; wages paid fortnightly; average number days idle per member during year, 15; cause of idleness inclement weather; waiting for other lines of allied trades; total number employed at trade in locality, 400; difference in wages and hours of labor between members; non-members of organization, from 2½c. to 5c. per hour in favour of members; President, Arthur Opperman, 229 Young St., Hamilton; Secretary, Herman Reinhold, 232 Bold St., Hamilton; meets alternate Fridays.

Name,—Cigar Makers' Union No. 55; organized 1869; total membership, male, 185; female, 8; average earnings per week, male $10; female $10; number of working hours first five days 40; on Saturday 5, wages paid weekly; average number of days idle per member during year about 35; cause of idleness, stocktaking; difference in wages and hours of labor between members

and non members of organization, there are no non-members under the jurisdiction of this union ; benefits, lack of employment $3 per week ; sickness $5 ; in case of death $50 to $550. President D. Turcott, Hamilton, Cor., Sec., G. H. Wilson, Hamilton ; meets second Tuesday of each month.

Havelock.

Name,—Brotherhood Railroad Trainmen No. 293. Organized Sept. 1901 ; total membership, 53, average earnings per week, $16.50 ; number of working hours first five days ; ready for duty at all times ; wages paid monthly ; average number of days idle per member during year, 30 ; total number employed at calling in locality 59 ; benefits, death, class A. $500, B. $800, C. $1,350. President Geo. D. Dart, Havelock ; Cor. Sec., Jno. R. McWhorter, Smith's Falls, meets 2nd and 4th Thursday in month at 2.30 p.m.

Inglewood.

Name,—Maintenance of Way Employees, Inter. No. 230. Organized, June, 1901 ; total membership 40, average earnings per week, hands, $8.40, foreman, $11.70, number working hours during week, 60 ; total number employed at calling in locality, 4, difference in wages between members and non-members of organization, 10 cents per day in favor of members. President W. J. Neil, Wingham, P. O.; Cor. Sec , J. W. Jaggo, Inglewood P. O. ; meets last Saturday every 3rd month

Kingston.

Name,—Lake Seamen. Organized July 10, 1905 ; total membership, 85: average earnings per week $9 to $11, wages paid monthly; average number of days idle per member during year 90, cause of idleness, winter weather, boats laid up; total number employed at calling in locality, 150 ; difference in wages between members and non-members of organization, members receive 25 cents more per day than non-members ; benefits, death, $75, shipwreck benefits $300, accident benefits ; $150 to $300, special work for members, reading room ; Cor. Sec., Thos. Fleming, P. O. Box 96 Kingston ; meets each Monday.

Name,—Carpenters' and Joiners' Union of America No. 249. Organized Aug. 12th, 1888, total membership 70, average earnings per week, $14.72, number of working hours, first five days, 45 ; on Saturday, 8 hours, wages paid fortnightly ; average number days idle per member during year 30 ; cause inclement weather ; total number employed at trade in locality, 80 ; benefits, sickness, $3 per week ; death from $200 to $400 President, Jno. Davis, Barrack St., Kingston, Cor. Sec., W. H. Hubble, 26, Quebec St., Kingston; meets 2nd and 4th Monday.

Name,—Iron Moulders' Union Organized, 1895 ; total membership, 24; average earnings per week $14.25 ; number working hours first five days, 50, on Saturday 5 hours, wages paid fortnightly, number days idle per member during year 60; cause slackness ; all are members of organization, benefits $5 per week for thirteen weeks, in case of death, $100 upwards. President, W. Reynolds, Frontenac St. Kingston ; Cor. Sec., Jno. Flanagan, 130 Clarence St., Kingston ; meets, 1st and 3rd Mondays.

Name,—Painters, Paperhangers and Decorators of America, No. 114. Organized May 24th, 1900 ; total membership, 33 ; average earnings per week, $9 ; number working hours, full week, 54 ; wages paid weekly ; average number days idle per member during year, about 90 ; difference in wages between members and non members of organization, about 50c. per day in favor of members. President, Joseph Mulholland, 16 Main St., Kingston ; Cor. Sec , Geo. B. Coward, 386 Albert St Meets 1st and 3rd Monday in month.

Name,—Longshoremen's International Union, No. 229. Organized March 21st, 1901; total membership, 85; average earnings per week, $9; number of working hours first five days, 50; on Saturday, 9 hours; wages paid weekly; difference in wages between members and non-members, former receives $9 and $12 per week, non-members, $7.50; special work for members, hall in which to read and study. President, James A. O'Neil, 276 Sydenham St., Kingston; Cor. Sec., Wm. Mullin, 42 Ordinance St., Kingston. Meets 2nd and 4th Wednesday in month.

Name,—Stone Cutters' Association of North America. Organized 1900; total membership, 12; average earnings, per week, $18; number of working hours, 48; wages paid fortnightly; average number of days idle per member during year, 70; cause, lack of building operations; total number employed at trade in locality, 12; all are members of organization; benefits: death, $100. President, W. B. Taylor, Princess St., Kingston; Cor. Sec., P. J. O'Brien, 521 Clergy St. West, Kingston. Meets 1st Tuesday each month.

Name,—Amalgamated International Sheet Metal Workers, No. 117. Total membership, 20; average earnings per week, $12; number of working hours (full week), 54; wages paid weekly; average number of days idle, sometimes all winter; total number employed at trade in locality, 25; benefits; death, $100. President, George Babcock, College St., Kingston; Cor. Sec., J. Anderson, Barriefield P.O.

Name,—Amalgamated Society of Engineers, No. 575. Organized 1851; total membership, 32; average earnings, $13.50; number of working hours first five days, 50; Saturday, 6 hours; wages paid fortnightly; total number employed at calling during year, 100 to 200; benefits, lack of employment, $2.50 per week; sickness, $2.50 per week: death, $60; superannuation, $2.50 weekly. President, Henry Stewart, 91 Earl St., Kingston; Cor. Sec., Jno. Lovick, 152 Gordon St., Kingston. Meets alternate Wednesdays.

Kenora.

Name,—Order of Railway Conductors, No. 362. Organized 1894; membership, 35; average earnings per week, $25; number of working hours, first five days; mileage basis, Saturday (100 miles), 9 hours; wages paid monthly; average number of days idle per member during year, varies with traffic conditions; number employed at calling in locality, about 40; benefits, death, amount of insurance policy. President, D. Campbell, Kenora; Cor. Sec., W. A. McCullough, Kenora. Meets 1st Sunday and 3rd Friday in month.

London.

Name,—Brotherhood of Railroad Trainmen, No. 240. Organized 1885; membership, 79; average earnings per week, $15; number of working hours' first five days, 60; Saturday, 12 hours; wages paid monthly; average number of days idle per member during year, 52; cause, decrease in business; total number employed at calling in locality, 150; benefits, lack of employment, $35 per month, in case of death, $1,350 to $1,000 to $5,000. President, Daniel Murray, 290 Hyman St., London; Cor. Sec., David Gillett, 502 Gray St., London. Meets 2nd and 4th Sunday in month.

Name,—Locomotive Brotherhood of Firemen, No. 468. Membership, 31; average earnings per week, $15; number of working hours during week, 60; wages paid monthly; average number of days idle per member during year, 20; cause, vacation; total number employed at calling in locality, 35; cash benefit: lack of employment, $9 per week; death, from $500 to $3,000. President. J. E. Sheppard, 635 Colborne St., London; Cor. Sec., Fred B. Bell, 813 Maitland St., London. Meets 2nd and 4th Sunday in month.

Name,—Printing Pressmen and Assistants' Union, No. 173. Organized June, 1904; membership. 29; average earnings per week, $12; number of working hours, first five days, 49 hours and 10 minutes in summer and 9 hours in winter; on Saturdays, 4 hours and 50 minutes; benefits. death, $100. President, H. Woonton, 698 Maitland St. London; Cor. Sec., F. Christie, 233 Hill St. Meets 1st Saturday in month.

Name,—Metal Polishers, Brass Moulders and Brass and Silver Workers' International, No. 32. Organized 1892; total membership, 45; average earnings per week, $16. number of working hours, first five days, 50; Saturday, 6 hours; wages paid part weekly and part fortnightly; average number of days idle per member during year, about 2 weeks; cause, slackness in trade; total number employed at trade in locality, 45; difference in wages and hours of labor between members and non-members of organization, about 50 per cent. in favor of members; benefits: death, $100; special work for members, reading rooms. President, Donald Eldridge, Clark St., London; Cor. Sec., John Smith, 282 Grey St., London. Meets 2nd and 4th Tuesday of each month.

Name,—Garment Workers of America, No. 33. (Pant, overalls and shirtmakers) organized Dec. 3, 1898, total membership, male 4, female. 45; average earnings, male, not given; female $5 per week; number working hours first five days, 40; Saturday 4 hours; wages paid weekly; difference in wages and hours of labor between members and non-members; members work 44 hours per week; non-members 54; members also have less night work and steadier work all the year round; President, L. Sheldrake. 85 Dundas St. London; Corresponding Secretary, Miss Ada Berry, 85 Dundas St. London; meets last Wednesday of each month.

Name,—Painters, Decorators and Paperhangers of America, No. 97; organized July 23, 1895; total membership about 50; average earnings per week $12; number working hours during week 48; wages paid weekly; total number employed at trade in locality, 75 to 100; cash benefits, death $150 to $200; President, William H. Mitchell, 777 Gray St. London; Corresponding Secretary, J. W. McCandless, 720 Lorne Ave, London; meets 2nd and 4th Friday in month.

Name,—Bricklayers' and Masons' Internation Union, No. 5. Organized, 1882: membership 53; average earnings per week, $10; number working hours first five days 40; Saturday 4; wages paid weekly; average number days idle per member during year, 95; cause of idleness inclement weather; total number employed at buisness in locality 60; difference in wages between members and non-members of organization. non-members work one hour per day more than members; cash benefits, death $500; President F. H. Graydon, 500 Bathurst St. London; Corresponding Secretary, Harry Rymill, 491 Oxford St. London; meets 2nd and 4th Wednesday in month.

Name,—Society of Engineers, No. 625. Organized 1851; membership, 20; average earnings per week, $13; number working hours first five days 50; on Saturday 5 hours; average number days idle per member during year 24; cause stocktaking; cash benefits, lack of employment $2.50 per week; sickness, $2.50 per week; death, $60; superannuation, $2.50 per week; President, Alex. McDonald 238 Oxford St. London; Corresponding Secretary, Walter J. Evans, 611 William St. London; meets, alternate Fridays.

Lindsay.

Name,—Locomotive Engineers, No, 174; total membership 35; average earnings per week $25: wages paid monthly; total number employed at calling in locality, 40; President, W. Dolby Box 205, Lindsay; Corresponding Secretary Thos. Wilkinson, Box 205, Lindsay; meets alternate Sundays.

Midland.

Name,—Longshoremen, Marine and Transportation, No. 199. Organized, Aug. 1st, 1900; total number employed at calling in locality, about 50 difference in wages and hours of labor between members and non-members of organization, members receive 15 cents per hour more than non-members; President, Wm. Clegg, Midland; Corresponding Secretary, D. A. Hall, Midland; meets 1st and 3rd Tuesdays of each month.

North Bay.

Name,—Maintenance of Ways Employees' International, No. 244; total membership, 75; number working hours during week, 50; total number at calling in locality, 100; President, W. J. Oldham, Box 468, North Bay; Corresponding Secretary, L. B. Copeland, Chalk River Station; meets quarterly.

Name,—Order of Railway Conductors. Organized March 13th, 1889; total membership, 41; average earning per week about $30; number working hours during week, on a mileage basis; wages paid monthly; total employed in locality about 85; all are members of organization; benefits, in case of death sliding scale from $1,000 to $3,000; President Linas O'Connor, North Bay; Corresponding Secretary, H. A. Washburn, Box 400, North Bay; meets 2nd and 4th Sunday.

Niagara Falls.

Name,—United Brotherhood of Carpenters and Joiners, No. 713. Organized January 17, 1901; total membership, 140; average earnings per week, $16.20; number working hours during week, 54; wages paid weekly; average number days idle per member during year, 21; cause of idleness, inclement weather; total number employed at trade in locality, 200; benefits—death, $200; disability, $400. President, W. Faurot, Niagara Falls, Ont.; Cor. Secretary, W. Hodgkins, Box 392, Niagara Falls, Ontario. Meets each Monday.

Name,—Brotherhood of Railway Trainmen, No. 379. Organized Sept. 23rd, 1883; total membership, 60; average earnings per week, $20; number working hours during week, varies; total number employed at calling in locality, about 100. President, James J. O'Neil, Niagara Falls, Ont.; Cor. Sec., William E. Leat, Niagara Falls, Ont. Meets first and third Wednesday.

Ottawa.

Name,—Stereotypers' and Electrotypers' Union, No. 30. Organized [illegible] 2, 1900; total membership, 9; average earnings per week, $15 to $16; number working hours, four days, 36 hours; Friday 9 hours, Saturday 5 hours; wages paid weekly; total number employed at trade in locality, 9; benefits in case of death, one dollar from each member and $60 from International. President, Thos. Hulme, Ottawa; Cor. Sec., Arsene Briendeau, Ottawa. Meets first Thursday in month.

Name,—Order of Railway Conductors, No. 29. Organized, 1871; total membership, 80; average earnings per week, $25; number working hours during week, run on mileage basis; benefits, in case of death, $1,000 to $3,000. President, W. A. McIntosh, 563 James St. Ottawa; Cor. Sec., A. E. Wright, 625 Lawson St., Ottawa. Meets second and fourth Sundays in month.

Name,—Stonecutters' Association of N. A. Organized March 1, 1888; total membership, 85; average earnings per week, $18.92; number working

hours first five days, 40, on Saturday 4 hours; wages paid fortnightly; average number days idle per member during year, 116—cause, inclement weather; total number employed at trade in locality, 45; benefits in case of death, $100. President, Joseph Jignac, Ottawa; Cor. Sec., R. J. Tierney, 194 Friel St., Ottawa. Meets second and fourth Wednesday in month.

Name,—Bricklayers' and Masons' International of N. A., No. 14. Organized Oct. 17, 1865; total membership, 125; average earnings per week, $22.50; number working hours first five days 45, on Saturday 5 hours; wages paid fortnightly; average number days idle per member during year, 60; cause of idleness, cold weather; total number employed at trade in locality, about 125; difference in wages and hours of labor between members and non-members of organization, members receive one dollar more per day than non-members; benefits—sickness, what members wish to give; death, $25; special work for member, have a hall for this purpose. President, J. Esacott, 177 Nepeau St., Ottawa, Cor. Sec., W. A. Scharb, 215 Cambridge St., Ottawa. Meets first and second Thursday in month.

Name,—Printing Pressmen, No. 5. Organized January 1st, 1879; total membership, 37; average earnings per week, $16.50; number working hours first five days, 42½, on Saturday 5 hours; wages paid both weekly and fortnightly; total number employed at business in locality, 40; difference in wages between members and non-members of organization, members receive $6 per week more than non-members. President, Frank Fowler, 206 Lyon St., Ottawa; Cor. Sec., Alfred Larden 327 Bell St., Ottawa. Meets second Monday in month.

Owen Sound.

Name,—Bricklayers' and Masons' International, No. 11. Organized 1899; total membership, 30; average earnings per week, $21.60; number working hours during week, 54; wages paid fortnightly; average number of days idle per member during year 90; cause, inclement weather; total number employed at trade in locality, 40; difference in wages and hours of labor between members and non-members of organization, members get 10c. to 15c. more than non-members. President, Thos. Fisk, Owen Sound; Cor. Sec., George A. Perkins, Box 561, Owen Sound. Meets Thursday.

Name,—Journeymen Stonecutters' Association of America. Total membership, 10; average earnings per week, $19; number of working hours during week, 48; wages paid fortnightly; average number of days idle per member during year, 100; cause, winter weather; total number employed at trade in locality, 10; all are members of organization; benefits, in case of death, $100; President, George A. Perkins, Owen Sound; Cor. Sec., Alex. Robb, Owen Sound; meets 2nd and 4th Friday in month.

Preston.

Name,—Ironmoulders, No. 314. Organized May, 1900; total membership, 75; number of working hours during week, 60 in winter, summer 50; average number of days idle per member during year, from 50 to 60; wages paid weekly; total number employed at trade in locality, 100; benefits, sickness, $5.25 per week; death, from $100 up according to length of membership; President, Thomas Mulligan, Preston; Cor. Sec., Joseph Janson, Box 98, Preston; meets 1st and 3rd Wednesday in month.

PETERBOROUGH.

Name,—Musicians' Union, No. 191. Special work for members; have reading room; President, W. Hughes, Peterborough; Cor. Sec., J. A. Hooper, Box 484, Peterborough.

Name,—Maintenance of Ways Employes, No. 246. Total membership, 60 · average earnings per week, foreman $12, men $7.80; number of working hours during week, 60; total number employed at business in locality, 73; difference in wages between members and non-members of organization, G.T.R. pays $1.30 per day; do not recognize organization; C.P.R. recognize organization and pay schedule price, from $1.40 to $1.50 per day; benefits, sickness, 50 cents per day after first three days; in case of death $250, paid by the G.T.R. Co., to which the men contribute from 60 cents to 80 cents per month; President, Thos. Whitten, Port Hope; Cor. Sec., J. B. Naylor, 48 Aylmer St., Peterborough; meets last Saturday of month.

Name,—Carpenters and Joiners, No. 672. Organized October 11th, 1900; total membership, 62; average earnings per week, $13.50; number of working hours per week, 54; wages paid weekly; average number of days idle per member during year, 90; cause, severe weather; total number employed at trade in locality, 350; difference in wages between members and non-members of organization, 2½ per cent. in favor of members; benefits, in case of death, $200; President, John Alexander, Peterborough; Cor. Sec., Geo. Sloan, Box 150, Peterborough; meets 2nd and 4th Monday in month.

Name,—Typographical Union, No. 248. Organized January, 1902; total membership, 39; earnings per week (minimum), $11; number of working hours during week, 48; wages paid weekly; total number employed at trade in locality, 39; benefits, funeral expenses; President, Chas. Reid, P. O. Box 924, Peterborough; Cor. Sec., J. G. Perry, Box 730, Peterborough; meets 2nd Saturday in month.

Name,—International Journeymen Barbers of America, No. 402. Organized July, 1902; total membership, 18; average earnings per week, $11; total number employed at calling in locality, 28; benefits, sickness $5 per week, in case of death, according to length of time in organization; President, George Brosseau, 329 George St., Peterborough; Cor. Sec., M. H. Gainey, 178 Hunter St., Peterborough; meets last Monday in month.

Name,—Patternmakers' League of North America. Organized Oct. 17, 1900; total membership, 15; average earning per week, $15.60; number of working hours, first five days 50; number of working hours on Saturday, 9 hours during winter months and 5 hours on Saturday in summer; wages paid fortnightly; average number of days idle per member during year, 6 days; cause, slackness of work; total number employed at trade in locality, 27; difference in wages between members and non-members of organization, members receive from 25 cents to 50 cents more per day than non-members; benefits, sickness, $4 per week; superannuation, a 25-year member receives $12 per month; a 30-year member receives $16 per month; President, Chas. Westbrook, Box 236, Peterborough; Cor. Sec., S. H. Sanderson, Box 236, Peterborough; meets 1st and 3rd Saturday in month.

Name,—Maintenance of Ways Employees, No. 211. Organized Oct., 1900; average earnings per week, $10; number of working hours during week, 60. President, George Spicer, Peterboro; Corresponding Secretary, James O'Brien, Box 566, Peterboro. Meets quarterly, 2nd last Saturday in month.

Port Arthur.

Name,—Locomotive Firemen, No. 593. Organized March, 1902; total membership, 35; average earnings per week, $20; number of working hours during week, 70; wages paid monthly; average number of days idle per member during year, about 15; cause of idleness, not much freight moving; total number employed at calling in locality, 45; benefits, sickness, as lodge may determine; death, from $3,000 to $5,000; superannuation, if member is totally disabled he gets full amount of insurance. President, Fred Lundburg, Port Arthur; Corresponding Secretary, T. R. Harris, Box 272, Port Arthur. Meets 2nd and 4th Sundays in month.

Name,—Brotherhood of Locomomotive Engineers. Organized Oct., 1903; total membership, 22; average earnings per week, $30; number of working hours during week 72; wages paid monthly; total number employed at calling in locality, 30; average number of days idle per member during year, 30; benefits, death, $1,500 to $4,500. President, W. M. Dohm, Port Arthur; Corresponding Secretary, D. A. Roberge, P.O. Box 194, Port Arthur. Meets 1st and 3rd Sundays in month.

Palmerston

Name, Carriage Builders' International Union, No. 61. Organized June 1st, 1906; average earnings, $10; number of working hours during week, 60; wages paid weekly; average number of days idle per member during year, 12; cause, slackness in trade; total number employed at trade in locality. 50. President, John Milburn, North Bay P.O.; Corresponding Secretary, G. Gadsby, North Bay, P.O. Meets 1st and 3rd Fridays.

Port Colborne.

Name,—Carpenters and Joiners of America, No. 1168. Organized July 14th, 1902; total membership, 33; average earnings per week, $10; number of working hours during week, 54; average number of days idle per member during year, 90; total number employed at trade in locality, 33; difference in hours of labor between members and non-members of organizations, members work 1 hour less per day than non-members; benefits, sickness, $3 per week, death, $50 to $200. President, George W. Deeks, Humberstone P.O.; Corresponding Secretary, H. L. Augustine, Humberstone P.O. Meets 1st and 3rd Mondays in month.

Smith's Falls.

Name,—Brotherhood of Trainmen, No. 245. Total membership, 65; average earnings per week, $22; number of hours during week, 54; wages paid monthly; total no employed at calling in locality, 80; benefits, death, $500; $1,000 to $1,350 disability; this amount is also paid; special work for members, a fine library is maintained. President, Jas. A. Tobin, Smith's Falls; Corresponding Secretary, W. J. Stinson, Smith's Falls. Meets every Sunday afternoon.

Name,—Iron Moulders' Union of North America, No. 201. Organized June, 1896; total membership, 106; average earnings per week, $15; number of working hours, first five days, 50; on Saturday, 9 hours; wages paid fortnightly; average number of days idle per member during year, 14; cause, repairs; total number employed at trade in locality, 106; benefits, lack of employment, free

from dues, sickness, $5.25 per week, death, $100 to $200. President, John Whitney, Smith's Falls; Corresponding Secretary, John Garrett, P.O. Box 263, Smith's Falls. Meets 1st and 3rd Tuesdays in month.

Name,—Locomotive Engineers, No. 381. Organized Sept., 1888; total membership, 46; average earnings per week, $25; number of working hours during week, yard service, 12 hours, night and day; main line, all hours; wages paid monthly; average number of days idle per member during year, about 15; total number employed at calling in locality, 35; benefits, insurance, from $1,500 to $4,000. President, Patrick McFall, Smith's Falls; Corresponding Secretary, James C. Currie, Box 258, Smith's Falls. Meets 1st and 3rd Sundays in month (afternoon).

Name,—Brotherhood of Locomotive Firemen. Organized March 28th, 1892; total membership, 58; average earnings per week, $17; number of working hours during week, from 36 to 72; wages paid monthly; total number employed at calling in locality, 60; benefits, death, from $500 to $3000. President Rueben Plato, Smith's Falls; Corresponding Secretary, Hugh Richmond, Smith's Falls. Meets 2nd and 4th Mondays in month, at 1.30 p m.

St. Catharines.

Name,—Brotherhood of Carpenters and Joiners, No. 38. Date organized, February, 1883; total membership, 98; average earnings per week, $12; number working hours first five days, 45; Saturday, 5 hours; wages paid weekly; number days idle per member during year, 40; cause, inclement weather; total number employed at trade in locality, 110; difference in wages and hours of labour between members and non-members of organization none, as all are members of organization: benefits, sickness, voluntary subscription; in case of death, $50 to $200; President, John Levine, St. Catharines; Corresponding Secretary, James Carty, Box 193, St. Catharines.

Name,—Barbers Union, No. 1. Organized Oct., 1886; total membership 21, average earnings per week $12, number working hours first five days 60; number working hours Saturday 16, total number employed at calling in locality 21, benefits, sickness, $3 per week, in case of death, $20. President, William Rand, St. Catharines, Corresponding Secretary, Adam M. Haynes, St. Catharines; meets 1st and 3rd Monday in month.

Name,—Bricklayers, Masons and Plasterers No. 4. Organized June 5, 1882, total membership, 42, average earnings per week $12, number working hours first five days 45, on Saturday, 5 hours, wages paid weekly, average number days idle per member during year, 100, cause, lack of work, inclement weather, etc., total number employed at business in locality, 42, special work for members, recreation room, during winter season. President, F. H. Hemphill, St. Catharines, Corresponding Secretary C. G. Batey, Box 53, St. Catharines. Meets 1st and 3rd Tuesdays in month.

Name,—Painters, Decorators and Paper Hangers of America, No. 407. Organized Aug. 1st, 1901; total membership, 30; average earnings per week, $12; number of working hours first 5 days 45, Saturday 5 hours; wages paid weekly; average number days idle per member during year, 30; cause, building trade slack in winter season; total number employed at business in locality, 36; difference in wages and hours of labor between members and non-members of organization, all are members of organization; benefits, death, $100 for membership of one year, $150 for membership of two years. President, Thomas A. Leach, Henry St., St. Catharines; Corresponding Secretary, Wm. D. Outram, 30 Nelson street. Meets 2nd and 4th Wednesday in month.

St. Thomas.

Name,—Order of Railway Conductors, No. 13. Organized, 1882; total membership, 110; average earnings per week, $25; work 7 days each week; wages paid monthly; total number employed at calling in locality, 150. President, N. H. Ryan, St. Thomas; Corresponding Secretary, John Mackenzie, St. Thomas. Meets 2nd and 4th Sundays in month.

Name,—Barbers' International Union of America, No. 222. Organized May 12, 1900; total membership, 22; average earnings per week, $11; number working hours first 5 days, 60; on Saturday, 14; wages paid weekly; total number employed at business in locality, 40; benefits, sickness, $5 per week; death, from $65 to $500. President, L. M. Robinson, St. Thomas; Corresponding Secretary, Edgar L. Compton, 615 Talback street, St. Thomas. Meets last Thursday in month.

Name,—Cigarmakers' International Union of America, No. 420. Total membership, 8; average earnings per week, $11; number working hours, first five days, 40, Saturday from 5 hours to 6½ hours; wages paid weekly; average number days idle per member during year about 14; cause, stocktaking; total number employed at trade in locality, male 10, female 24; difference in wages between members and non-members of organization, members get $1 per thousand more than non-members; benefits lack of employment $3 per week; sickness $5 per week; death from $50 to $500. President, Charles McLean, Box 754, St. Thomas; Cor. Sec., John Pearse, Box 754, St. Thomas. Meets first and third Fridays in month.

Name,—Locomotive Engineers, No. 132. Organized 1876: total membership, 131; average earnings per week, $25; work full seven days; wages paid monthly; total number employed at calling in locality, 250; benefits, sickness, $40 per month; in case of death $1,500 to $4,500; superannuation, arranging to pay from this time forward, $40 per month. President, M. J. McAndrew, St. Thomas; Cor. Sec., E. Cowles, Box 1313, St. Thomas. Meets Monday afternoon.

Name,—Journeymen Tailors' Union of America, No. 141. Organized 1890; total membership, male 22, female 27; average earnings per week, male from $10 to $12; female $5 to $7; number working hours during week from 60 to 72; average number days idle per member during year, 60; cause, dullness of trade; total number employed at business in locality, male 27, female 35; difference in wages between members and non-members of organization, members receive from $2 to $4 more per week than non-members; benefits, death from $25 to $100. President, Hugh Oliver, St. Thomas; Cor. Sec., Wm. Abernethy, Box 719, St. Thomas. Meets fourth Monday in month.

Sarnia.

Name,—Order of Railway Conductors, No. 189. Organized April 27, 1886; total membership, 40; average earnings per week, $20; no regular hours of work, whenever called; wages paid monthly; total number employed at calling in locality, 60; benefits, death, according to amount insured for. President, John Vicary, Tunnel P. O.; Cor. Sec., Harry Bell, Tunnel P. O. Meets first and third Tuesdays in month at 2 p.m.

Name,—Brotherhood of Trainmen, No. 227. Organized Sept. 23, 1883; total membership 161; benefits, if sick, a sick benefit. President, Fleming Fountain, 104 Emma Street, Sarnia; Cor. Sec., D. McEachern, 137 John Street, Sarnia. Meets every Wednesday afternoon in month.

Name,—Painters, Decorators and Paperhangers of America, No. 422. Total membership, 17; average earnings per week, $13; number working hours during week, 54; wages paid weekly; average number of days idle per member during year, 30; cause of idleness, inclement weather; total number employed at trade in locality, 25; difference in hours of labor between members and non-members of organization, members work one hour less than non-members; benefits, death, from $100 to $200. President, W. A. Jones, Sarnia; Cor. Sec., George H. Weston, 108 Queen Street, Sarnia. Meets first and third Tuesday in month.

Stratford.

Name,—International Journeymen Barbers of America. Organized Jan. 23, 1901; total membership, 24; average earnings per week from $9 to $10; number working hours, first five days, 60, on Saturday, 14 hours; wages paid weekly; total number employed at calling in locality, 24; benefits, sickness, $5 per week; death, $75 to $500; special work is sometimes carried on for members. President, William Brimer, Stratford; Cor. Sec., G. J. Spriggs, Box 712, Stratford.

Name,—Locomotive Brotherhood of Engineers, No. 188. Organized 1875; total membership, 70; average earnings per week, $20; wages paid monthly; total number employed at calling in locality, 76; benefits from $1,500 to $4,500; special work for members, classes of instruction. President, George Jeffrey, Box 337, Stratford; Cor. Sec., John Battley, Box 337, Stratford. Meets first and third Sundays in month.

Name,—Machinists, No. 103. Days idle per member, this year about 270 owing to lock-out by G. T. R.; benefits, sickness $11 per week. President, Alfred Vanstone, Stratford; Cor. Sec., J. G. Yeoward, Box 331, Stratford, Meets first and third Monday in month.

Toronto.

Name,—Railway Brotherhood of Trainmen. Organized Nov. 10, 1889; total membership, 115; average earnings per week, $15; wages paid monthly; total number employed at calling in locality, 200; benefits, $500 to $1,350; President, George Lappage, 6 Arthur St., Toronto; Cor. Sec., Henry T. Meredith, 282 Crawford St., Toronto. Meets first Sunday at 2.30 p.m. and third Sunday 7.30 p.m., in month.

Name,—International Brotherhood of Electrical Workers. Organized, January 29, 1903; total membership, 80; average earnings per week, $14; number working hours, first 5 days 50, Saturday 5; wages paid fortnightly; total number employed at trade in locality, 100; benefits—sickness, $3 per week, death $100. President, R. Lea, 35 Lennord Avenue, Toronto; Cor. Sec., H. Button, 43 Pears Avenue, Toronto. Meets first and third Mondays in month.

Name,—International Journeymen Horseshoers, No. 49. Organized Feb. 3, 1897; total membership, 20; average earnings per week, $13.50 and $15; number working hours first 5 days, 50; on Saturday, 5 hours; wages paid weekly; total number employed at trade, about 50; difference in wages between members and non-members of organization, members receive $1.50 more per week. President, W. D. Forsythe, 361 Euclid Avenue, Toronto; Cor. Sec., Chas. McIntosh, 24 Regent St., Toronto. Meets second and fourth Wednesdays in month.

Name,—Longshoremen's Union, No. 646, Total membership, 30; average earnings per week, $15; number working hours during week, have no regular working hours, employed when required; wages paid weekly; average number

days idle per member during year, 120; cause, close of navigation; total number employed at calling in locality 45 President, I. H. Sanderson, corner Queen St. and Spadina Ave., Toronto; Cor. Sec., J. Duffey, 346 King St., E. Meets second Sunday in month.

Name,—Musical Protective Association. Organized December 2, 1887; total membership—male 465, female 15; wages paid weekly; difference in hours of labor between members and non-members of organization, the hours have been reduced 30 per cent. during the last 30 years; benefits, sickness, $3 per week; death, $25. President, T. B. Jones, 93 College St., Toronto; Cor. Sec., Joseph Ball, 95 Walton St., Toronto Meets first Sunday in month.

Name,—Glass Bottle Blowers' Association of U. S. and C., No. 66. Organized 1867; total membership, 60; average earnings per week, $25; number working hours first 5 days, 42½; on Saturday 7¾; wages paid fortnightly; average number days idle per member during year, 90; cause, no work in summer months; total number employed at trade in locality, 80; benefits, in case of death, $500. President, Chas. McNicholl, 77 Beaconsfield Avenue, Toronto; Cor. Sec., George Gardiner, 93 Beaconsfield Avenue, Toronto. Meets second and fourth Sunday.

Name,—Bakers and Confectionery Workers of America, No. 204. Organized, April 15, 1895; total membership, 140; average earnings per week, $13; number working hours first 5 days, 9 to 10 hours per day, 8 to 9 hours at night, Saturday 10 to 12 hours per day and 11 to 12 hours at night; wages paid weekly; total number employed at calling in locality, about 200; difference in wages between members and non-members of organization, members receive $3 per week more than non-members. President, Albert Cleveland, 1 Midland Place, Toronto; Cor. Sec., John Gardner, 695 Queen St., W., Toronto. Meets first and third Saturdays in month.

Name,—Brewery Workers, No. 304. Organized July, 1902; total membership, 250; average earnings per week, $10; number of working hours, first five days, 50; on Saturday, 5; wages paid weekly; average number days idle per member during year, 10; cause, slackness of trade; number employed at business in locality, 250; President, John D. Corcoran, Toronto; Cor. Sec., Geo W. Haines, 10 Thompson St., Toronto; meets 2nd and 4th Fridays in month.

Name,—Street Railway Employees, No. 113. Organized August 24th, 1904; total membership, 1,045; number of working hours during the week, from 5 hours to 10 hours; wages paid fortnightly; total number employed at calling in locality, 1,400; President, J. W. Williamson, 74 Scollard St., Toronto; Cor. Sec., J. W. Griffin, 48 Heward Ave; meets 2nd and 4th Sundays in month.

Name,—Photo Engravers No. 35. Organized July, 1903; average earnings per week, $20; number working hours first 5 days, 45; on Saturday, 4 hours; wages paid weekly; total number employed at business in locality, about 75; benefits death $75; President, T. W. Elliott, Dunn Avenue, Toronto; Cor. Sec., Arthur J. C. Rolfs, 420 King St. east, Toronto; meets 1st Monday and 3rd Wednesday.

Name,—Railway Carmen of America, No 17. Organized May 18th, 1904; total membership, 32; average earnings per week, $9; number working hours during week, 60; wages paid monthly; total number employed at business in locality, 100; benefits, sickness $3.50 per week, death amount of insurance; President, Alfred Dagg, 4 Humbert St., Toronto; Cor. Sec., Wm. Burness, 5 Wellington Ave., Toronto; meets 3rd Wednesday in month.

Name,—Theatrical Stage Employees, No. 83. Organized 1900; total membership, 50; average earnings per week from $9 to $18; number working hours during the week, from 36 to 60; wages paid weekly; average number of days

idle per member during year, 100; cause, theatres closed; total number employed at calling in locality, 50: difference in wages between members and non-members of organization, members are paid $3 more per week: President, W. Powis, Toronto; Cor. Sec., F. Leatels, 465 Parliament St. Toronto; meets 2nd Sunday in month.

Name,—Stonecutters' Association of North America. Organized 1853; total membership, 137; average earnings per week, $22; benefits, death $100; President, James Craig, 394 Leslie Street, Toronto; Cor. Sec., Lachlan Davidson, Markham St., Wychwood, Ont; meets 2nd and 4th Fridays in month.

Name,—International Brotherhood of Bookbinders, No. 28. Organized June 27th, 1893; total membership, 270; average earnings per week, $14.50; number of working hours first five days, 47½; Saturday, 4½ hours: wages paid weekly; average number of days idle per member during year, 12; cause, slackness in trade; total number employed at trade in locality, 270; difference in wages between members and non-members of organization, members receive $4.50 more per week than non-members; benefits, death $50; President, Wm. F. Hentz; Cor. Sec., Chas. R. Bates, 295 Adelaide St. west; meets 2nd and 4th Monday in month.

Name,—Builders' Laborers' Union. Organized 1881; total membership, 600; average earnings per week, $9; number of working hours, first five days, 44; on Saturdays, 4; wages paid fortnightly; benefits, death $75; President, Edward Picton, 485 Concord Ave., Toronto; Cor. Sec., John M. Mackintosh, 48 Humbert St.; meets every Tuesday in month.

Name,—Tile Layers and Helpers. Organized Nov. 21, 1902; total membership, 45; average earnings per week, $17.60, helpers $7.92; number working hours first five days, 40; on Saturday, 4 hours; wages paid weekly; average number of days idle per member during year, about 40; cause, slackness in trade; total number employed at trade in locality, 55: President, W. J. McLean; 152 Huron St., Toronto; Cor. Sec., E. A. McCarthy, 82 Bond Street, Toronto, meets 1st and 3rd Fridays in month.

Name,—Painters', Decorators' and Paperhangers', No. 3. Organized 1887; total membership, 300; average earnings per week, $13.20; number of working hours, first five days, 49; on Saturday, 4; wages paid fortnightly; average number of days idle per member during year, 90; cause, slack seasons during midsummer and winter; total number employed at trade in locality, 1,500; benefits, death $200, superannuation $200; President, James Bilton, 56 William St., Toronto; Cor. Sec, J. W. Harmon, 267 Queen St. west; meets 2nd and 4th Tuesday in each month.

Name,—Carpenters' and Joiners' 1st Branch. Organized 1871: total membership, 300; average earnings per week, $13; number working hours, first five days, 40; Saturday, 4; wages paid fortnightly; benefits—lack of employment, $2.50 per week; sickness, $3 for 26 weeks; death, $50; superannuation, $2 a week if a member for 25 years, and $1.75 if a member for only 18 years. President, R J. Nichols, 107 Rose Avenue; Cor. Sec., W. H. Wilson, 38 Yorkville Avenue. Meets alternate Mondays in month.

Name,—Marine Engineers, No 1. Organized 1883; total membership, 123; average earnings per week, $12; number working hours during week, 60; wages paid monthly; average number of days idle per member during year, 60; special work for members, reading room and instruction during winter months. President, George W. Arnold, 91 Cowan Avenue, Toronto; Cor. Sec., E. A. Prince, 17 Maplewood Place, Toronto Meetings arranged annually.

Name,—Typographical Union, No. 91. Organized 1844; total membership, male, 825; female 2; average earnings per week, male, $14; female, $14; num-

ber working hours, first five days—job offices, 9 hours and 50 minutes per day; newspapers, 8 hours per day; number working hours Saturday, 4 hours and 50 minutes; wages paid part weekly, fortnightly and monthly; average number of days idle per member during year, 30—cause, slackness in business; total number employed at trade in locality, 925; benefits, sickness, $4 per week for 13 weeks; death, $120. President, James Simpson, Toronto; Cor. Sec., A. E. Thompson, 624 Ontario St. Meets 1st Saturday in month.

Name,—Civic Employees, (Teamsters). Organized April 6th, 1894; total membership, 45; average earnings per week, $12; number working hours, first five days, 45; on Saturday, 5; wages paid weekly; benefits, sickness, $3 per week; death, $30. President, George Burt, 83 Woolsey St., Toronto; Cor. Sec., William Hill, 840 King St. W. Meets 2nd Wednesday in month.

Name,—International Brotherhood of Teamsters, No. 457. Organized Oct. 16th, 1904; total membership, 43; average earnings per week, $10.80; number of working hours during week, 60; wages paid weekly; total number employed at calling in locality, 450; difference in wages between members and non-members of organization, members receive $2 per week more than non-members; benefits, strike or lockout, $5 per week. President, John Notley, 287 Lippincott St. Toronto; Cor. Sec., Henry R. Barton, 156 Victoria St., Toronto. Meets 1st and 3rd Sunday in month.

Name,—Printing Pressmen, No. 10. Organized October, 1889; total membership, 130; average earnings per week, $16.50; number working hours, first five days, 49; on Saturday, 4 hours; wages paid weekly; total number employed at trade in locality, 140; benefits, death, $100. President, John Barber, 67 Sullivan St., Toronto; Cor. Sec., Edward H. Randall, 25 Oak St, Toronto, Meets 1st Monday in month.

Name,—Metal Polishers and Buffers, Platers and Brass Workers, No. 21. Total membership, 75; average earnings per week, $15; number of working hours, first five days, 50; on Saturday, 9 hours; average number of days idle per member during year, 15—cause, stocktaking; total number employed at trade in locality, 90; difference in wages between members and non-members of organization, members receive 10 cents per hour more than non-members; benefits, death, $150. President, John C. Curlett, 72 McMurray St., Toronto Jct.; Cor. Sec, W. Hutchinson, 221 Sumach St., Toronto. Meets 2nd and 4th Wednesday in month.

Name,—Maltsters' Union, No. 317. Total membership, 90; average earnings per week, $11.50; number working hours during week, 60, and Sunday 8 hours; wages paid weekly; average number of days idle per member during year, 180—cause, slackness in trade; total number employed at trade in locality, 90. President, Alfred Cheeseman, Toronto; Cor. Sec., Joseph Blackburn, 120 Logan Avenue. Meets 2nd and 4th Thursdays in month.

Name,—International Steam Engineers, No. 152. Organized Oct. 2nd, 1902; total membership, 196; average earnings per week from $10 to $15; number of working hours, first five days, from 8 to 16 per day; Saturday, 4 to 16 hours; total number employed at calling in locality, from 400 to 500; benefits—lack of employment; dues are paid by local; sickness, $3 a week for 8 weeks. President, John Fox, 246 St. Patrick St., Toronto; Cor. Sec., F. W. Barron, 76 McMurray St., Toronto Junction. Meets 2nd and 4th Tuesdays in month.

Name,—Wallpaper, Machine Printers and Color Mixers. Organized Feb. 18th, 1903; total membership, 18; number working hours, first five days, 52½; on Saturday, 5 hours; wages paid weekly; average number of days idle per

member during year, 12—cause, repairs; total number employed at trade in locality, 18. President, R. J. Forrey, 864 Bloor St. W., Toronto; Cor. Sec., Peter L. Brex, New Toronto P.O. Meets 2nd Wednesday in month.

Name,—Piano, Organ and Instrumental Workers of America, No. 41. Organized December 18, 1902; total membership, 180; average earnings per week, $15; number working hours, first five days, 45, Saturday, 5 hours; wages paid fortnightly; average number days idle per member during year, 10; cause, stocktaking; all are members of organization; benefits, lack of employment, dues are suspended; sickness, $5 per week; death, $50 if a member five years, $100 if a member ten years. President, James Wainwright, 198 Albany Avenue, Toronto; Cor. Sec, Frank B. Holton, 631 Queen Street W., Toronto. Meets second and fourth Mondays in month.

Name,—Order of Railway Conductors, Div. 344. Organized October, 1893; total membership, 25; average earnings per week, $15 to $20; number working hours per week, mileage basis; total number employed at calling in locality, 35; benefits. death, from $1,000 to $3,000. President, John White, East Toronto P. O.; Cor. Sec., Edwin Seller, 126 Peter Street, Toronto. Meets second and fourth Mondays in month.

Name,—International Cigarmakers, No. 27. Organized May, 1869; total membership, male, 390, female, 12; average earnings per week, male, $10, female, $10; number working hours, first five days, 40, on Saturday, 4 hours; wages paid weekly; number days idle per member during year, 6; cause, stocktaking; total number employed at trade in locality, male, 390, female, 12; benefits, lack of employment, $3 per week; sickness, $5 per week; in case of death, from $150 to $550. President, J. McCarthy, 118 Manning Avenue, Toronto; Cor. Sec., J. Pamphilion, 88 Church Street, Toronto.

Name,—Woodworkers' Amalgamated International of America, No. 157 (Cabinet Makers). Organized June 24, 1901; total membership, 65; average earnings per week, $12; number working hours, first five days, 45, Saturday, 5 hours. President, James Veitch, 221 Richmond Street W., Toronto; Cor. Sec., James Livingstone, 260 Simcoe Street, Toronto. Meets second and fourth Tuesday in month.

Name,—Women's International Label League, No. 177; total membership, male, 3, female, 18; benefits, death, $50. President, Mrs. N. A. McLeod, 132 Euclid Avenue, Toronto; Cor. Sec., Mrs. Jno. Gardner, 695 Queen Street W., Toronto. Meets second and fourth Saturdays in month.

Name,—Upholsterers' International Union, No. 30. Organized 1892; total membership, 50; average earnings, $13; number working hours, first five days, 45; on Saturday, 4 hours; wages paid weekly; average number days idle per member during year, about 20; cause, slackness in trade; total number employed at trade in locality, about 100; difference in wages between members and non-members of organization, members receive from 10 per cent. to 15 per cent. more wages. President, William O'Dea, 26 Hayter Street, Toronto; Cor. Sec., F. W. Prior, 220 North Lisgar Street, Toronto. Meets first and third Mondays in month.

Name,—Leather Workers' Union, No. 5. Organized February, 1902; total membership, 75; average earnings per week, male, $11; female, $5; number working hours, first five days, 45; on Saturday, 5 hours; wages paid fortnightly; average number days idle per member during year, 14; cause, stocktaking and dull season; total number employed at trade in locality, male, 250, female, 150 President, E. Shaw, 107 Spadina Avenue, Toronto; Cor. Sec., R. J. Hodge, 630 Ossington Avenue, Toronto. Meets first and third Thursdays in month.

Windsor.

Name,—Plumbers, Steam and Gas Fitters, No. 407. Organized April, 1902; total membership, 8; average earnings per week, $19; number working hours during week, 54; wages paid weekly; total number employed at trade in locality, 13; benefits, sickness, $5 per week; death, $100. President, A. White, Windsor, Ont.; Cor. Sec., A. E. Paddon, P. O. Box 657, Windsor, Ont. Meets first and third Fridays in month.

Name,—Switchmen, No. 184. Organized July 23, 1903; total membership, 13; average earnings per week, $19; number working hours during week, 72; wages paid monthly; total number employed at calling in locality, 25; benefits, death, $600 to $1,200. President, G. Scott, Oak Avenue, Windsor; Cor. Sec., James J. Lonnee, Box 406, Windsor.

Name,—Brotherhood of Locomotive Engineers, No. 390. Organized June, 1893; total membership, 26; average earnings per week, $18; wages paid monthly; average number days idle per member during year, 40; cause, slackness in business; total number employed at calling in locality, 30. President, James McGarrah, Assumption Street, Windsor; Cor. Sec., D. Lanspeary, P. O. Box 382, Windsor. Meets second and fourth Fridays in month.

Name,—Brotherhood of Railway Trainmen. Organized 1898; total membership, 80; average earnings per week, $18; wages paid monthly; benefits, sickness, a weekly payment is made. President, John Lawton, Detroit, Mich.; Cor. Sec., Chas. Weldrick, 75 Arthur Street, Windsor. Meets first and third Monday and second and fourth Sunday in month.

Name,—Bricklayers' and Masons' Union, No. 6. Organized April 12, 1895; total membership, 50; average earnings per week, $18; number working hours during week, 54; average number days idle per member during year, 100; cause, inclement weather; benefits, sickness, $25; death, from $25 to $40. President, Thos. Quartin, Walkerville P. O.; Cor. Sec., Jonathan Rapson, 11 Niagara Street (Box 688), Windsor. Meets every Tuesday in month.

Name,—International Journeymen Barbers, No. 451. Organized Oct. 16, 1902; total membership, 23; average earnings per week, $12; number working hours, first five days, 55; Saturday, 15 hours; wages paid weekly; total number employed at trade in locality, about 15; difference in hours of labor between members and non-members of organization, non-members work from 2 to 3 hours longer each day; benefits, sickness, $5 per week; in case of death, from $60 to $500. President, N. H Jackson, 75 London Street, Windsor; Cor. Sec., Alfred Warren, Windsor. Meets fourth Wednesday in month.

Waterloo.

Name,—Operative Broom-makers, No. 7. Organized Oct. 1, 1902; total membership, 4; average earnings per week, $11; number working hours, first five days, 50, Saturday, 5 hours; total number employed at trade in locality, 14. President, George Oetzel, Waterloo; Cor. Sec., H. Oetzel, Waterloo. Meets last Friday in month.

Name,—Laborers (Civic Employees), No. 26. Organized April, 1901; total membership, 20; average earnings per week, from $10.50 to $12; number working hours, first five days, 50, number working hours Saturday, 9; wages paid fortnightly; average number days idle per member during year, 90; total number employed at calling in locality, 100; difference in wages between members and non-members of organization, from 25 cents to 50 cents per day. President, H. B. Herchenratter, Waterloo; Cor. Sec., Charles Smidt, Waterloo. Meets second Thursday in month.

Woodstock.

Name,—Ironmoulders' Union of North America, No. 249. Organized July 5, 1859; total membership, 35; average earnings per week, $15; number working hours, first five days, 50 (no work on Saturday); wages paid weekly; average number days idle per member during year, 100; cause, closed down during winter months; total number employed at trade in locality, about 55; difference in wages between members and non-members of organization, about 65 cents per day in favor of members; benefits: sickness, $5.25 per week, death, $100 to $200, according to length of membership; total disability, same amount as in case of death. President, George Childs, Woodstock; Cor. Sec., F. O. Burgers, Box 228, Woodstock. Meets first and third Fridays in month.

Name,—Builders' Laborers. Organized Feb., 1903; total membership, 25; average earnings per week, $12.15; number working hours during week, 54; wages paid fortnightly; average number days idle per member during year, from 60 to 90; cause, dullness in building trade; total number employed at calling in locality, 25 to 30; difference in hours of labor between members and non-members of organization, non-members work one hour per day longer than members; benefits, death, $75. President, Henry Stock, Metcalfe Street, Woodstock; Cor. Sec., John Green, 71 Douglas Street, Woodstock. Meets first and third Tuesdays in month.

Name,—Bricklayers' and Masons' Union, No. 22. Organized Dec., 1902; total membership, 22; average earnings per week, $18; number working hours during week, 54; wages paid fortnightly; average number days idle per member during year, 120; cause, inclement weather; total number employed at trade in locality, 22; all are members of organization. President, S. May, Woodstock; Cor. Sec., E. Johnson, 15 Norwich Avenue, Woodstock. Meets second and fourth Wednesdays in month.

Wallaceburg.

Name,—Glass Bottle Blowers' Association, No. 70. Organized 1876; total membership, 65; average earnings per week, $35; number working hours, first five days, 42½, Saturday, 7¾; wages paid fortnightly; average number days idle per member during year, 90; cause, repairing furnaces, etc.; difference in wages between members and non-members of organization members receive $1.50 more per day than non-members; benefits, death, $500. President, M. M. Quinn, Wallaceburg; Cor. Sec., H. H. Summerman, Wallaceburg. Meets first and third Saturdays in month.

Remarks from Labor Organizations.

No. 5.—In the opinion of our Union, a proper scaffolding inspector should be appointed by the proper authority in each locality.

No. 15.—It is the belief of our Union that undesirable immigrants and paupers should be prevented from coming into Canada.

No. 18.—It is the opinion of our Union that a law should be passed to the effect that none be employed as engineers who have not served as locomotive firemen for at least three years. British subjects and American citizens should be considered preferable. This is the sentiment of several organizations of the same calling.

No. 19.—Our body is of the opinion that eight hours per day for first five days, and four hours on Saturday quite sufficient working time.

No. 30.—The members of this Union are strongly of the opinion that the tariff on carpets coming in from the Old Country should be sufficiently high as to ensure us steadier employment.

No. 32.—We desire a more active enforcement of the Sunday shaving law throughout Ontario. Inspection of all barber shops is desirable.

No. 42.—We should like to see a law enacted compelling the installing of washrooms and lockers for moulders' clothes, so that they could change in shops to avoid going out in wet weather. Rheumatism is prevalent with moulders on this account.

No. 43.—Our organization desires to go on record as protesting against the contract system for prison labor, particularly in woodworkers' industries.

No. 58.—Pauper immigrants, no matter from what country, should not be allowed to come into Canada.

No. 85.—Our Union strongly objects to any provident and insurance scheme forced upon us by railway companies, on general principles. Even the benefits provided therein we consider unfair. The amount paid per day in case of sickness during a period of twenty-six weeks, and free medical attendance, which is not of the best, we consider is not commensurate with what we pay in for such. Joining these provident societies should not be compulsory on our members, but optional.

No. 79.—Our Union would like to know how it is that on all Government work for which tenders are called, union labor and wages prevailing in the locality where the work is done is specified in the contract, and the Government undertakes to see such is carried out. Well and good. But when Government work is done by day labor union men are positively refused recognition. A case in point: Last year, when the rebuilding of Federal Offices was under way, our members were only paid at the rate of 43 cents per hour. When the attention of the Deputy Minister of Labor was called to this fact, his reply was that as the matter was in the hands of another department he could not interfere. Our scale of wages for the last two years calls for 45 cents per hour. Our members on the work are losing two cents on every hour they worked. We cannot quite understand why the Government makes a proviso in favor of union labor on all tender work and not on day labor, which is directly under the charge of their own officials.

No. 114.—Our Union believes that the gathering of second hand bottles by foreigners and employes of the Street Commissioner's department, goes far to prevent us as mechanics from securing eight months' work in a year. Such custom is also a great injustice to the public, as it is an auxiliary for carrying disease. Bottles coming from the sick-room and thrown in the garbage can, and then resold, certainly cannot add to sanitation.

No. 117.—On behalf of our Association I might say that for years we have been trying to procure legislation compelling the placing of side steps on open cars, and, in a measure, the new Railway Companies Act has accomplished something towards that end, in so far that passengers are not permitted to remain on these steps.

No. 125.—The enactment of a scaffold by-law, similar to the one which was made operative in New York last year, is most requisite in all branches of the building trades requiring scaffolding.

DIRECTORY OF LABOR ORGANIZATIONS IN ONTARIO.

Name of Organization.	Name of President.	President's Address.	Name of Secretary.	Secretary's Address.	Nights of meeting.
Algoma Mills :					
Maintenance of Ways Employees, No. 491	M. H. Hall	Dean Lake P.O.	W. Jewkes	Dean Lake P.O.	Last Saturday in Month.
Brockville :					
Railway Conductors, No. 366	Adam Young	Box 642, Brockville	R. McConachie	Box 533, Brockville	First Sunday in Month.
Tailors', Journeymen I. Union of A., No. 262	Chas. Cato	Brockville	David Muirhead	Box 40, Brockville	2nd Monday in Month.
Brotherhood Carpenters & Joiners of A., No. 799	F. W. Chow	King St. W., Brockville.	E. J. Byrne	King St. W., Brockville.	Every Thursday.
Bricklayers, Masons and Plasterers, No. 130	John Burnston	Brockville	G. L. Barclay	Box 74, Brockville	Alternate Wednesdays.
Brantford .					
International Association of Machinists, No. 564	W. Foster	120 Eagle Ave., Brantford	Fred Jones	208½ Chatham St., Brantford	1st and 3rd Thursdays.
Bricklayers' and Masons' Union, No. 9	M. J. Carson	188 William St., Brantford	N. J. Kerr	136 William St., Brantford	Alternate Thursdays.
Int. Barbers' Union, No. 298	Fred Hamel	Brantford	Edward Rice	5 George St., Brantford.	Last Thursday in Month.
Int. B. Painters and Decorators of A., No. 93	Alex. Warrick	146 Pearl St., Brantford.	C. H. Jones	93 Arthur St., Brantford.	Alternate Mondays.
Plasterers' Int. Associat'n, No. 164	Thos. Jennings	83 Erie Ave., Brantford.	James Patterson	20 Jarvis St., Brantford.	2nd Tuesday in Month.
Brantford Typographical Union, No. 378	Ira D. Scriston	Brantford	Roy Sayles	Brantford	4th Saturday in month.
Berlin :					
Amalgamated Woodworkers' Int., No. 275	W. J. Heimbecker	Berlin	J. H. Heimbecker	Box 150, Berlin	Alternate Tuesdays.
Federal Labor Union, No. 17	Jos. Fraiser	Box 218, Berlin	Albert Schwarz	Box 208, Berlin	1st and 3rd Thursdays.
Bricklay's', Masons' & Plasterers' Union of A., No. 12	Lea Steckley	Berlin	Jacob E. Cook	11 Church St., Berlin	Every Friday.
United Carpenters' and Joiners' of A., No. 553	C. F. Brandt	Waterloo	J. Branniff	Waterloo	1st & 3rd Fridays in Month
Collingwood :					
United Brotherhood Carpenters of A., No 1583	S. Paiks,	Collingwood	J. V. Buffey	Box 659, Collingwood	2nd and 4th Thursdays.
Bricklayers', Masons' and Carp. Int. Union, No. 19	Geo. B. Draper	Collingwood	Ed. Chamberlain	Box 769, Collingwood	1st and 2nd Wednesdays.

Journeymen Barbers' Int. Union, No. 528	W. Passlow	Collingwood	Fred Bollen	Box 536, Collingwood	1st Monday in Month.
Chapleau					
Grand Int. Brotherhood L. Engineers, No. 39	A. A. McLaren	Chapleau	J. D. McAdam	Chapleau	1st and 3rd Mondays.
Chatham :					
Bricklayers' and Masons' Union, No. 18	Jos. Handysides	Chatham	Jos. Westmor	Chatham	Each Tuesday.
Carleton Place :					
Brotherhood Railway Carmen of A., No. 229	J. D. McLaren	Carleton Place	Jas. H. New	Carleton Place	1st and 3rd Thursdays in Month.
Stovemounters' and Steel R. W. Int. Union, No. 78	S. C. Waugh	Carleton Place	R. P. Drynan	Box 327, Carleton Place	2nd and 4th Mondays in Month.
Ironmoulders' Union, No. 362	Jos. Carson	Carleton Place	T. S. Leger	Box 360, Carleton Place	1st and 3rd Thursdays in Month.
Dundas :					
Ironmoulders' Union of N. America, No. 269	Thos. Franey	Dundas	William Watts	Box 315, Dundas	2nd Tuesday in Month.
Fort William :					
Brotherhood Locomotive Firemen	A. W. Pinna	Fort William	A. E. Grant	Box 65, Fort William	Each Wednesday.
Typographical Union, No. 47	A. M. Frank	Port Arthur	A. J. Hutton	Box 48, Fort William	Last Saturday in Month.
Fort Frances :					
Int. Order Maintenance Ways Employees, No. 13	J. T. Wilson	St. Lewis, Fort Frances	C. Boyle	Bernoist Buildings, St. Lewis, Fort Frances	On call of President.
Galt :					
Int. Journeymen Barbers' Union of A., No. 413	Robert Wylie	Main St., Galt	James A. Allan	Water St., Galt	Last Thursday in Month.
United Brotherhood of Carpenters', No. 1216	Robt. Lothing	Hespeler	Jos. W. McLeod	Galt	Alternate Monday.
Guelph :					
Brussels Carpet Weavers' Union, No. 277	Thos. Holyman	Guelph	M. T. Loudon	Guelph	2nd Monday in Month.
Piano, Organ & Mus. Instr. W'ker's Union, No. 34	Jas. E. Norris	Guelph	Frank T. Howard	Box 787, Guelph	1st and 3rd Thursdays.
Journeymen Barbers' Int. of America, No. 310	Ed. Wilson	Macdonel St., Guelph	W. H. Fairley	Box 9, Guelph	Last Tuesday in Month.
Hamilton :					
Musical Protective Association, No. 293	Frank Evans	61 McGill St., Hamilton	Jos. Gimblet	112 Caroline Street, Hamilton	2nd Sunday.
Int. Broom and Whistmakers' Union, No. 9	Walter R. Rollo	288 Victoria, Hamilton	W. H. McAdam	82 Vine St., Hamilton	2nd and 4th Mondays.
Boot and Shoe Workers' Union, No. 228	Jos. J. Grimblet	112 Caroline, Hamilton	A. W. Charlesworth	269 Robert St., Hamilton	2nd Tuesday

DIRECTORY OF LABOR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President.	President's address.	Name of Secretary.	Secretary's address.	Nights of Meeting.
Hamilton.—*Continued*					
Hamilton Typographical Union, No. 129	C. I. Aitchison	*Herald*, Hamilton	John J. Burns	230 John St., Hamilton	2nd Saturday.
Journeymen Barbers' Int. Union of A., No. 131	Thos. Keywood	Hamilton	W. A. Solford	59 John Street	1st and 3rd Mondays.
Int. Tobacco Workers' Union, No. 48	B. O'Reilly	74 Locomotive Street, Hamilton	Jas. Ogilvie	34 Simcoe St., Hamilton	2nd and 4th Mondays.
United Brotherhood Carpenters' & J. of A. No. 18	W. Penny	33 Erie Ave., Hamilton	Jas. Calvert	102 Ray St., Hamilton	1st and 3rd Mondays
Bricklayers' and Stonemasons' Union, No. 1	W. Rowe	Wood St., Hamilton	A. J. Seymour	7 John St. N., Hamilton	Each Tuesday.
Ironm'ders' Union, No. 26	T. H. Church	Pearl St., Hamilton	W. L. Lucas	82 Leaming St., Hamilton	Each Wednesday.
Painters' and Decorators' Union, No. 205	John Preston	23 Walnut Street North, Hamilton	A. J. Somerville	368 Jackson Street West, Hamilton	
United Garment Workers', Cutters and Trim., No. 23	Richard Jose	416 Aberdeen Street, Hamilton	R. J. Ferguson	11 Elgin St., Hamilton	1st Thursday.
Printing Pressmen and Ass. Union, No. 176	A. W. Wilks	185 Sanford Avenue, Hamilton	W. R. Berry	158 Market St., Hamilton	4th Friday.
WomenStitchers' International Union, No. 234	Lizzie Catlin	71 William St., Hamilton	Mary Sheppard	62 Alanson St., Hamilton	4th Thursday.
Bookbinders' Int. Brotherhood of America, No. 114	W. R. Crocket	17 Eran St. E., Hamilton	Llewellyn Thomas	55 West Ave. S., Hamilton	
Amal. Society Carpenters' and Joiners', No. 819	A. Opperman	229 Yonge St., Hamilton	H. Reinhold	232 Bold St., Hamilton	Alternate Fridays.
Cigarmakers' Union, No. 55	D. Turcott	Hamilton	G. H. Willson	Hamilton	2nd Tuesday.
Havelock:					
Brotherhood Railway Trainmen, No. 293	Geo. D. Dait	Havelock	J. R. McWorten	Smith's Falls	2nd and 4th Thursdays.
Inglewood:					
Maintenance of Ways Employees' Int. No. 230	W. J. Neil	Wingham P. O.	J. M. Jaggo	Inglewood P. O.	Last Sat. every 3rd month
Kingston:					
Lake Seamen			Thos. Fleming	Box 96, Kingston	Each Monday.
Carpenters' and Joiners' Union of A., No. 249	John Davis	Barrack St., Kingston	W. H. Hubble	26 Quebec St., Kingston	2nd and 4th Mondays.
Iron Moulders' Union	Wm. Reynolds	Frontenac St., Kingston	John Flanagan	130 Clarence St., Kingston	1st and 3d Mondays.
Painters', Paper Hangers' and Decorators' Union of A., No. 114	Jos. Mulholland	16 Main St., Kingston	Geo. B. Conard	386 Albert St., Kingston	1st and 3rd Monday.

'Longshoremen's International Union, No. 229	Jas. A. O'Neil	276 Sydenham St., Kingston	Wm. Mullin	42 Ordnance St,, Kingston	2nd and 4th Wednesdays.
Stone Cutters' Assof. N.A.	W. B. Taylor	Princess St., Kingston	P. J. O'Brien	21 Clergy St., Kingston	1st Tuesday.
Sheet Metal Workers, Amalg. Int. No. 117	Geo. Babcock	College St., Kingston	J, Anderson	Barrifield P. O	
Amalg'd Society of Engineers, No. 575	Henry Stewart	91 Earl St., Kingston	John Lovick	152 Gordon St., Kingston	Alternate Wednesdays.
Kenora:					
Order Railway Conductors, No. 362	D. Campbell	Kenora	W. A. McCullough	Kenora	1st Sunday and 3rd Friday 2nd and 4th Sundays.
London:					
Railroad Brotherhood of Firemen, No. 240	Daniel Murray	290 Hyman St., London	David Gillett	502 Grey St., London	2nd and 4th Sundays.
Locomotive Brotherhood of Firemen No. 468	J. E. Sheppard	635 Colborne St., London	Fred. B. Bell	813 Maitland, London	2nd and 4th Sundays.
Printing Pressmen and Assists. Union, No. 173.	H. Woonton	698 Maitland St., London	F. Christie	233 Hill St., London	1st Saturday.
Metal Polishers' and Brass Polishers' Int., No. 32	D. Eldridge	Clark St., London	John Smith	282 Grey St., London	2nd and 4th Tuesdays.
Garment Workers' Union of America, No. 33	L. Sheldrake	85 Dundas St., London	Miss Ada Berry	85 Dundas St., London	Last Wednesday.
Painters, Decorators and Paper Hangers of A., No. 97	Wm. H. Mitchell	777 Gray St., London	J. W. McCandless	720 Lorne St., London	2nd and 4th Fridays.
Bricklayers' and Masons' Int. Union, No. 5	F. H. Graydon	500 Bathurst St., London	Harry Rymill	491 Oxford St., London	2nd and 4th Wednesdays.
Soc. of Engineers, No. 625	Alex. McDonald	238 Oxford Street	Walter J. Evans	611 William St., London	Alternate Fridays
Lindsay:					
Loco've Engineers,,No.174	W. Dolty	Box 205, Lindsay	Thos. Wilkinson	Box 205, Lindsay	Alternate Sundays.
Carriage Builder' International Union, No. 61	John Milburn	North Bay P. O	G. Gadsby	North Bay P. O	1st and 3rd Friday.
Midland:					
'Longshoremen's Union, No. 199	William Clegg	Midland	D. A. Hall	Midland	1st and 3rd Tuesdays.
North Bay,					
Maintenance Ways Empl's Int. Union, No. 244	W. J. Oldham	Box 468, North Bay	L. B. Copeland	Chalk River Station	Meets quarterly.
Order Railway Conductors	Linas O'Connor	North Bay	H. A. Washburn	Box 400, North Bay	2nd and 4th Sundays.
Niagara Falls:					
United Brotherh'd Carpenters and Joiners, No. 713	W. Faurot	Niagara Falls	W. Hodgkins	Box 392, Niagara Falls	Each Monday.
Brotherhood of Railway Trainmen, No. 379	James J. O'Neill	Niagara Falls	W. E. Leat	Niagara Falls	1st and 3rd Wednesdays.

DIRECTORY OF LABOR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President.	President's Address.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
Ottawa :					
Stereotypers' and Electrotypers' Union, No. 50.	Thos. Hulme	Ottawa	Arsene Briendeau	Ottawa	1st Thursday.
Order Railway Conductors, No. 29	W. A. McIntosh	363 James St., Ottawa	A. E. Wright	625 Lawson St., Ottawa	2nd and 4th Sundays.
Stonecutters' Association of North America	Jos. Jignac	Ottawa	R. J. Tierney	194 Friel St., Ottawa	2nd Wednesday.
Bricklayers' and Masons' Int. Union of N.A., No. 14	Jno. Esacott	177 Nepean, Ottawa	W. A. Scharl	215 Cambridge St. Ottawa	1st and 2nd Thursday.
Printing Pressmen's Int. Union, No. 5	Frank Fowler	206 Lynn St., Ottawa	Alf. Larden	327 Bell Street	2nd Monday.
Owen Sound :					
Bricklayers' and Masons' Int. Union, No. 11	Thos. Fisk	Owen Sound	G. A. Perkins	Box 561, Owen Sound	Each Thursday.
Journeymen Stonecutters' Association of America.	G. A. Perkins	Owen Sound	Alex. Robb	Owen Sound	2nd and 4th Friday.
Preston :					
Iron Moulders' Union, No. 314	Thos. Mulligan	Preston	Jas. Janson	Box 98, Preston	1st and 3rd Wednesdays.
Peterboro' :					
Musicians' Union, No. 191	W. Hughes	Peterboro'	J. A. Hooper	Box 484, Peterboro'	
Maintenance of Ways' Employees' Union, No. 246	Thos. Whitton	Port Hope	J. B. Naylor	48 Aylmer St., Peterboro'	Last Saturday.
Carpenters' and Joiners' Union, No. 672	John Alexander	Peterboro'	Geo. Sloan	Box 150, Peterboro'	2nd and 4th Mondays.
Typographical Union, No. 248	Chas. Reid	Box 924, Peterboro	J. G. Perry	Box 730, Peterboro'	2nd Saturday.
Int. Journeymen Bakers of America, No. 402	Geo. Brosseau	329 George, Peterboro'	W. H. Gainey	178 Hunter St., Peterboro'	Last Monday.
Patternmakers' League of North America	Chas. Wertbrook	Box 236, Peterboro'	S. H. Sanderson	Box 236, Peterboro'	1st and 3rd Saturday.
Maintenance of Ways Employees, No. 211	Geo. Spicer	Peterborough	Jas. O'Brien	Box 566, Peterboro'	Quarterly, 2nd last Saturday.
Port Arthur :					
Loco've Firemen, No. 593	Fred. Lunburg	Port Arthur	T. R. Harris	Box 272, Port Arthur	2nd and 4th Sunday.
Locomotive Engineers	W. M. Dohm	Port Arthur	D. A. Roberge	Box 194, Port Arthur	1st and 3rd Sunday.
Palmerston :					
Carriage Builders' Int. Union, No. 61	John Milburn	North Bay P. O	G. Gadsby	North Bay P. O	1st and 3rd Fridays.

Port Colborne :					
Carpenters' and Joiners' Asso'n of A., No. 1168..	Geo. W. Deeks.....	Humberstone P. O.....	H. L. Augustine	Humberstone P. O	1st and 3rd Monday.
Smith's Falls					
Brotherhood of Trainmen, No. 245..	Jas. A. Tobin.....	Smith's Falls.....	W. J. Stinson.....	Smith's Falls.....	Each Sunday afternoon.
Iron Moulders' Union of N. A., No. 201.....	John Whitney	Smith's Falls.....	John Garrett.....	Box 263, Smith's Falls...	1st and 3rd Tuesdays.
Locomotive Engineers, No. 381.....	Patrick McFall.....	Smith's Falls.....	James C. Currie.....	Box 258, Smith's Falls...	1st and 3rd Sunday.
Brotherhood Locomotive Firemen	Reuben Plato.....	Smith's Falls.....	H. Richmond.....	Smith's Falls.....	1st and 4th Mondays
St. Catharines :					
Brotherh'd Carpenters' & Joiners' Union, No. 38 .	John Levine.....	St. Catharines.....	James Carty.....	Box 193, St. Catharines..	.....
Barbers' Union, No. 1....	William Rand	St. Catharines,.....	Adam M. Haynes	St. Catharines.....	1st and 3rd Mondays.
Bricklayers', Masons' and Plasters' Union	F. H. Hemphill .,....	St. Catharines.....	C. G. Patey.....	Box 53, St. Catharines...	1st and 3rd Tuesdays.
Painters, Decorators and Paper Hangers of N. A., No. 407.....	Thos. A. Leach.....	Henry St., St. Catharines	W. D. Outram	30 Nelson St., St. Catharines	2nd and 4th Wednesdays.
St. Thomas :					
Order Railway Conductors No. 13.....	M. H. Ryan.....	St. Thomas.....	John MacKenzie.....	St. Thomas	2nd and 4th Sundays.
Barbers' Int. Union of A., No. 222.....	L. M. Robinson	St. Thomas	Edgar L. Compton...	615 Talback Street, St. Thomas	Last Thursday.
Cigarmakers' Int. Union of of America, No. 420....	Chas. McLean	Box 754, St. Thomas....	John Pearse	Box 754, St. Thomas	1st and 3rd Fridays.
Locomotive Engineers, No. 132.....	M. J. McAndrew.....	St. Thomas.....	E. Cowles	Box 1313, St. Thomas....	Monday afternoon.
Journeymen Tailors' Union of N.A., No. 141	Hugh Oliver.....	St. Thomas.....	W. Abernethy.....	Box 719 St. Thomas	4th Monday.
Sarnia :					
Order Railway Conductors, No. 189	John Vicory.....	Tunnel P.O.....	Harry Bell	Tunnel P.O.....	1st & 3rd Tuesdays, 2 p.m
Bro. of Trainmen, No. 227	F. Fountain	104 Emma St., Sarnia....	D. McEachren.....	137 John St., Sarnia.....	Each Wednesday aft'n.
Painters', Decorators' and Paperhangers' of A., No. 422.....	W. A. Jones.....	Sarnia.....	Geo. H. Weston.....	108 Queen St., Sarnia....	1st and 3rd Tuesdays.
Stratford :					
Int. Journeymen Barbers' Union of America.....	Wm. Brimer	Stratford	G. J. Spriggs	Box 712, Stratford	.....
Brotherhood Locomotive Engineers, No. 188.....	Geo. Jeffrey.....	Box 337, Stratford.....	John Battley.....	Box 337, Stratford	1st and 3rd Sundays.

DIRECTORY OF LABOR ORGANIZATIONS IN ONTARIO.—*Continued.*

Name of Organization.	Name of President.	President's Address.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
Stratford.—*Continued.*					
Machinists' Union, No. 103	Alf. Vanstone	Stratford	J. G. Yeoward	Box 331, Stratford	1st and 2nd Monday.
Toronto :					
Bro. Railway Trainmen	Geo. Luppage	6 Arthur, Toronto	H. T. Meredith	282 Crawford St., Toronto	1st Sunday at 2 p m. and 3rd Sunday at 7 p.m.
Int. Brotherhood Electrical Workers	R. Lea	Lennard Ave., Toronto	H. Button	43 Pears Ave., Toronto	1st and 3rd Monday.
Int. Journeymen Horseshoers' Union, No. 49	W. D. Forsythe	361 Euclid, Toronto	Chas. McIntosh	24 Regent St., Toronto	2nd and 4th Wednesday.
Musical Protective Ass'n	T. B. Jones	93 College St., Toronto	Jos. Ball	95 Walton St., Toronto	1st Sunday.
Glass Bottle Blowers Ass'n. of U. S. & C., No. 66	Chas. McNicholl	77 Beaconsfield Ave	Geo. Gardiner	93 Beaconsfield Ave., Toronto.	2nd and 4th Sunday.
Bakers and Confectionery Workers of A., No. 204	Albert Cleveland	1 Midland Pl., Toronto	John Gardner	695 Queen W., Toronto	1st and 3rd Saturday.
Brewery Workers' Union, No. 304	J. D. Corcoran	Toronto	Geo. W. Haines	10 Thompson St., Toronto	2nd and 4th Friday.
Street Railway Employes' Union, No. 113	J. W. Williamson	74 Scollard St., Toronto	J. W. Griffin	48 Heward Ave, Toronto.	2nd and 4th Sunday.
Photo. Engravers' Union No. 35	T. W. Elliott	Dunn Av., Toronto	J. C. Rolfs	420 King E., Toronto	1st Monday and 3rd Wednesday.
Railway Carmen of Am., No. 17	Alfred Dugg	4 Humbert St., Toronto	W. Burness	5 Wellington Ave., Toronto.	3rd Wednesday.
Theatrical Stage Employees' Union, No. 83	W. Pervis	Toronto	F. Leatels	465 Parliament St., Tor.	2nd Sunday.
Stonecutters' Ass'n of N. A.	James Craig	394 Leslie St., Toronto	L. Davidson	Markham St., Wychwood, Ont.	2nd and 4th Friday.
Int. Bro. Bookbinders' Union, No. 28	W. F. Hintz	Toronto	Chas. R. Bates	295 Adelaide W., Toronto	2nd and 4th Monday.
Builders' Laborers	Ed. Picton	Concord Ave., Toronto	J. M. Mackintosh	48 Humbert St., Toronto.	Each Tuesday,
Tile Layers' and Helpers' Union	M. J. McLean	152 Huron St., Toronto	E. A. McCarthy	82 Bond St., Toronto	1st and 3rd Friday.
P'nt'rs', Decoraters' & Paperhangers' Union, No. 3	Jas. Bilton	56 William, Toronto	J. W. Harmon	267 Queen W., Toronto	2nd and 4th Tuesday.
Carpenters' and Joiners', 1st Branch	R. J. Nichols	107 Rose Ave., Toronto	W. H. Wilson	38 Yorkville Ave., Tor.	Alternate Monday.
Marine Engineers, No. 1	Geo. W. Arnold	41 Cowan Ave., Toronto.	E. A. Prince	17 Maplewood Place, Tor.	Arranged annually.
Typo. Union, No. 91	James Simpson	Toronto	A. E. Thompson	624 Ontario St., Toronto.	1st Saturday.
Civic Employees(t'msters)	Geo. Burt	83 Woolsey St., Toronto	William Hill	840 King St. W., Toronto	2nd Wednesday.
Int. Bro. Teamsters, No. 457	John Notley	237 Lippincott, Toronto	H. R. Barton	156 Victoria St., Toronto.	1st and 3rd Sunday

Printing Pressmen, No. 10	John Barber	67 Sullivan St., Toronto	Ed. H. Randall	25 Oak St., Toronto	1st Monday.
Metal Polishers, Buffers, Slaters & Brassw'k'rs, No. 21	J. C. Curlett	72 McMurray St., Tor. Jct.	W. Hutchinson	221 Sumach St., Toronto	2nd and 4th Wednesday.
Maltsters' Union, No. 317.	Alf. Cheesman	Toronto	Jos. Blackburn	120 Logan Ave., Toronto.	2nd and 4th Thursday.
Int. Steam Eng'rs, No. 152	John Fox	246 St. Patrick St., Tor.	F. W. Barron	76 McMurray St., Tor. Jct.	2nd and 4th Tuesday.
Wallpaper Machine Printers' and Colormixers	R. J. Forrey	86 Bloor St. W., Toronto.	Peter L. Brex	New Toronto Jct. P.O.	2nd Wednesday.
Piano, Organ and Musical Instrum't W'kers, No. 41	Jas. Wainright	198 Albany Av., Toronto	F. B. Holtan	631 Queen St. W., Toronto.	2nd and 4th Monday.
Order Railway Conductors, Division 344	John White	East Toronto Junction	Edwin Seller	126 Peter St., Toronto	2nd and 4th Monday.
Int. Cigarmakers', No. 27	J. McCarthy	118 Manning Av., Toronto	J. Pamphilion	88 Church St., Toronto	
Woodworkers, Amal. Int. of America, 157	James Veitch	221 Richmond St. West	J. Livingstone	260 Simcoe St., Toronto.	2nd and 4th Tuesday.
Women's Internat'l. Label League, No. 117	Mrs. M. A. McLeod	132 Euclid Ave	Mrs. Jno. Gardner	695 Queen St. W., Toronto	2nd and 4th Saturday.
Int. Upholsterers' Union, No. 30	William O'Dea	26 Hayter, Toronto	F. W. Prior	220 N. Lisgar, Toronto	1st and 3rd Monday.
Leatherw'krs' Union, No. 5	E. Shaw	107 Spadina Av., Toronto	R. J. Hodge	630 Ossington Ave., Tor.	1st and 3rd Thursday.
Windsor:					
Plumbers, Steamfitters and Gasfitters, No. 407	A. White	Windsor	A. E. Paddon	Box 657, Windsor	1st and 3rd Friday.
Switch'ns' Union, No. 184	G. Scott	Oak Ave., Windsor	Jas. Lonnee	Box 406, Windsor	
Bro. Locomotive Engineers, No. 390	Jas. McGarrah	Assumption St., Windsor	D. Lanspeary	Box 382, Windsor	2nd and 4th Friday.
Bro. Railway Trainmen	John Lawton	Detroit	Chas. Weldrick	75 Arthur St., Windsor	1st and 2nd Monday and 1st and 2nd Sunday.
Bricklayers' and Masons' Union, No. 6	Thos. Quartin	Walkerville P.O.	Jonathan Rapson	11 Niagara St., Windsor.	Each Tuesday.
Int. Journeymen Bakers' Union, No. 451	W. H. Jackson	75 London St., Windsor.	Alf. Warren	Windsor	4th Wednesday.
Waterloo:					
Operative Broommakers' Union, No. 7	Geo. Oetzel	Waterloo	H. Oetzel	Waterloo	Last Friday.
Laborers (Civic employes), No. 26	H. B. Herchenratter	Waterloo	Chas. Smidt	Waterloo	2nd Thursday.
Woodstock:					
Ironmoulders' Union of N.A., No. 249	Geo. Childs	Woodstock	F. O. Burgers	Box 228, Woodstock	1st and 3rd Friday.
Builders' Laborers Union.	Henry Stock	Metcalf St., Woodstock	John Green	71 Douglas St., Woodstock	1st and 3rd Tuesday.
Bricklayers' and Masons' Union, No. 22	S. May	Woodstock	E. Johnson	15 Norwich Ave., Woodstock.	2nd and 4th Wednesday.
Wallaceburg:					
Glass Bottle Blowers' Association, No. 70	M. M. Quinn	Wallaceburg	H. H. Summerman	Wallaceburg	1st and 3rd Saturday.

Table showing average wages per week and hours of labor, with comparison between those organized and unorganized, in localities as reported; also, wage payment periods.

Location and Title of Organization.	Average Wages per week.		Hours of labor first five days.		Hours on Saturday.		Total Hours per week.		Average Number of days idle.	Period of Wage Payments.		
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		Weekly.	Bi-weekly.	Monthly.
	$ c.	$ c.										
ALGOMA MILLS:												
Maintenance of Ways, No. 491	8 70	.....	50	.....	10	.....	60	.....	.....	.....	.....	monthly
BROCKVILLE:												
Order of Railway Conductors, No. 36	75 per	mo'th	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Tailors' Union of America, No. 262	8 00	7 20	50	50	10	10	60	60	60	weekly	.....	.....
United Brotherhood of Carpenters and Joiners of America, No. 799	13 50	10 50	50	50	10	10	60	60	60	"	.....	.....
Bricklayers,' Masons' and Plasterers' Union, No. 13	18 00	13 50	45	.....	9	.....	54	.....	.....	"	.....	.....
BRANTFORD:												
International Association of Machinists, No. 564	13 50	.....	50	.....	9	.....	59	.....	10	weekly	.....	.....
Bricklayers' and Masons' Union, No. 9	12 00	.....	45	50	5	10	50	60	70	"	.....	.....
International Barbers' Union, No. 298	10 00	.....	50	.....	14	.....	64	.....	.....	"	.....	.....
International Brotherhood of Painters and Decorators of America, No. 93	11 50	3 40	45	.....	9	.....	54	.....	.....	"	.....	.....
Plasterers' International Association, No. 64	11 00	8 30	45	.....	9	.....	54	.....	100	"	.....	.....
Brantford Typographical Union, No. 378	12 00	.....	40	.....	8	.....	48	.....	.....	"	.....	.....
BERLIN:												
Amalgamated Woodworkers' International Union of America, No. 275	10 00	9 40	50	.....	5 from to	June Sept.	.....	.....	60	.....	.....	.....
Federal Labor Union, No. 17.	9 60	.....	50	.....	9	.....	59	.....	121	weekly	fortnightly	.....
United Brotherhood of Carpenters and Joiners of America, No. 553	12 25	10 75	50	.....	9	.....	59	.....	60	.....	fortnightly	.....
Bricklayers', Masons' and Plasterers' Union of America, No. 12	21 60	.....	45	.....	9	.....	54	.....	.....	weekly	.....	.....
COLLINGWOOD:												
United Brotherhood of Carpenters and Joiners of America, No. 1588.	.....	.....	50	.....	10	.....	60	.....	60	weekly	.....	.....
Bricklayers', Masons' and Plasterers' International Union, No. 19	21 60	18 00	45	50	9	10	54	60	240	.....	fortnightly	.....

Journeymen Barbers' International Union, No. 528	10 00		50		14		64		9	weekly		
CHAPLEAU:												
International Brotherhood of Locomotive Engineers, No. 319	30 00											monthly
CHATHAM:												
Bricklayers' and Masons' Union, No. 18	16 00		45	50	9	10	54	60	6 mos.	weekly		
CARLETON PLACE:												
Brotherhood of Railway Carmen of America, No. 229.	11 00		50		5		55		22			monthly
Stovemounters' and Steel Range Workers' International Union, No. 78	14 00		50		10		60		30			monthly
Ironmoulders' Union, No. 362	20 00		50		10		60			weekly		
DUNDAS:												
Ironmoulders' Union of N. A., No. 269	14 00		50		5		55				fortnightly	
FORT FRANCIS:												
International Order Maintenance of Ways Employees, No. 13	1 50 to 2 50						60					monthly
GALT:												
International Journeymen Barbers' Union of America, No. 413	10 00		60		15		75			weekly		
United Brotherhood of Carpenters, No. 1216	13 50	12 00	50		5		50			"		
GUELPH:												
Brussels Carpet Weavers' Union, No. 277	8 00		50		5		55				fortnightly	
Piano, Organ, and Musical Instrument Workers' Union, No. 34	12 00		50		5		55		75	weekly		
HAMILTON:												
International Broom and Whisk Workers' Union, No. 9.	13 50		50		5		55		15	weekly		
Boot and Shoe Workers' Union, No. 228			50		5		55		30	"		
Hamilton Typographical Union, No. 129	14 00		43¾		4¼		48			"		
Journeymen Barbers' International Union of America, No. 131	11 50		52½		14½		67			"		
International Tobacco Workers' Union, No. 48	10 00	10 00	50	50	5	5	55	55	36	weekly		
Int'n'l Bro'hood Carpenters & Joiners of America No. 18	14 00	Less	45		5		50		30 or 40	weekly	fortni'htly	
Bricklayers' and Stonemasons' Union, No. 1			54		5		59				fortni'htly	
Ironmoulders' Union, No. 26	15 90	13 90	50		9		59		30	weekly	fortni'htly	monthly
Painters', Paperhangers' and Decorators' Union, No. 205	15 00	10 50	40	40	5	5	45	45	40	weekly		
United Garment Cutters' and Trimmers' Union No. 23.	11 75		45	45	4½		49½	49½			fortni'htly	
Printing Pressmen's and Assistants' Union, No. 176	14 85		45		4⅔		49⅔			weekly		
Women Stitchers' International Union, No. 234	4 00		50		5		55		10	weekly		
Int'l Brotherhood of Bookbinders of America No. 114.	13 00		50		5		55			weekly		
Amalgamated Society of Carpenters and Joiners, No. 819	14 00	12 75	45	45	5	5	50	50	15	weekly		
Cigarmakers' Union No. 55	10 00		40		5		40		35*	weekly		
HAVELOCK:												
Brotherhood Railway Trainmen, No. 293	16 50											monthly
INGLEWOOD:												
Maintenance of Wages Employes' Int'n'l Union, No. 230	8 40	7 80	50		10							monthly

Table showing average wages per week, with hours of Labor, etc.—*Continued.*

Location and Title of Organizations.	Average Wages per week.		Hours of labor first five days.		Hours on Saturday.		Total Hours per week.		Average Number of Days Idle.	Period of Wage Payments.		
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		Weekly.	Bi-weekly	Monthly.
	$ c.	$ c.										
KINGSTON :	9.00 to											
Lake Seamen	11 00	9 50	.....	.....	.....	.....	.....	.....	90	.....	.....	monthly
Carpenters' and Joiners' Union of America, No. 249	14 72	Some Same	45	.....	8	.....	53	.....	30	.....	fortni'htly	.....
Ironmoulders' Union	14 25	.....	50	.....	5	.....	55	.....	60		fortni'htly	
Painters, Paperhangers and Decorators of America, No. 114	9 00	9 00	45	45	9	9	54	54	90	weekly	.....	.....
Longshoremen's International Union, No. 229	9 00	7 50	50	50	9	9	59	59	.....	weekly	.....	.....
Stonecutters' Association of North America	18 00	.....	40	.....	8	.....	48	.....	70	.....	fortni'htly	.....
Amalgamated International Steel Metal Workers, No. 117	12 00	.....	45	.....	9	.....	54	.....	.....	weekly	.....	.....
Amalmagamated Society of Engineers, No. 575	13 50	.....	50	.....	5	.....	55	.....	.....	.....	fortni'htly	.....
KENORA :						100						
Order of Railway Conductors, No. 362	25 00	.....	mil'ge	basis	9	miles	.....	.....	.....	.....	.....	monthly
LONDON :												
Brotherhood Railroad Trainmen, No. 240	15 00	.....	60	.....	12	.....	72	.....	52	.....	.....	monthly
Locomotive Brotherhood Firemen, No. 468	15 00	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
Printing Pressmen and Assistants' Union, No. 173	12 00	.....	45 5/6	.....	4 5/6	.....	50 2/3	.....	.....	weekly	....	.....
Metal Polishers', Brass Moulders' and Brass and Silver Workers' International, No. 32	16 00	8 00	50	.....	6	.....	56	.....	12	weekly	fortni'htly	.....
Garment Workers of America, No. 33	.....	.....	40	.....	4	.....	44	54	.....	weekly	.....	.....
Painters, Paperhangers and Decorators of America, No. 97	12 00	.....	40	.....	8	.....	48	.....	.....	weekly	.....	.....
Bricklayers' and Masons' International Union, No. 5	10 00	.....	40	.....	4	.....	44	50	95	weekly	.....	.....
Society of Engineers, No. 625	13 00	.....	50	.....	5	.....	55	.....	24	weekly	.....	.....
LINDSAY :												
Locomotive Engineers No. 174	25 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
NORTH BAY :												
Maintenance of Ways Employes' International, No. 244	.....	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
Order of Railway Conductors	30 00	.....	.....	.....	.....	.....	on mileage		.....	.....	.....	monthly
NIAGARA FALLS :												
United Brotherhood Carpenters and Joiners, No. 713	16 20	.....	45	.....	9	.....	54	.....	21	weekly	.....	.....
Railroad Brotherhood of Trainmen	20 00	.....	.....	.....	.....	.....	varies	.....	.....	.....	.....	monthly

	$ c.	$ c.										
OTTAWA :												
Stereotypers' and Electrotypers' Union, No. 50	15 to 16 00	.....	364 days.	9 hrs. Frid'y	5	.....	50	.....	.....	weekly	.....	.....
Order of Railway Conductors, No. 29	25 00	.....	Mil'ge	.....	Mil'ge	.....	Mil'ge	.....	.....	.....	.....	monthly
Stonecutters Association of N. A	18 92	18 92	40	40	4	4	44	41	116	.....	fortnig'tly	.....
Bricklayers and Masons' Int'l Union of N. A., No. 14	22 50	21 50	45	45	5	5	50	50	60	weekly	.....	.....
Printing Pressmen and Assistants' Union, No. 5	16 50	10 50	42½	.....	5	.....	47½	.....	.....	weekly	fortnig'tly	.....
OWEN SOUND :												
Bricklayers' and Masons' International Union, No. 11	21 60	21 45	45	45	9	9	54	54	90	.....	fortnig'tly	.....
Journeymen Stonecutters Ass'n of N. A	19 00	19 00	40	40	8	8	48	48	100	.....	fortnig'tly	.....
Ironmoulder's Union, No 314	.....	.....	50	50	10	10	60	60	5	weekly	.....	.....
PRESTON :												
Ironmoulders' Union, No. 314	.....	.....	50	50	10	10	60	60	60	weekly	.....	.....
PETERBOROUGH :												
Maintenance of Ways Employes, No. 246	7 80	6 30	50	50	10	10	60	60	.....	.....	.....	monthly
Carpenters and Joiners Union, No. 672	13 50	13 16	45	45	9	9	54	54	90	weekly	.....	.....
Typographical Union, No. 248	11 00	11 00	40	40	8	8	48	48	.....	weekly	.....	.....
Journeymen Barbers' Int'l Union of A. No. 402	11 00	11 00	.....	.....	.....	.....	.....	.....	.....	weekly	.....	.....
Patternmakers' League of N. A	15 60	13 50	50	50	5	5	55	55	6	.....	fortnig'tly	.....
Maintenance of Ways Employes, No. 211	10 00	10 00	50	50	10	10	60	60	.....	.....	.....	monthly
PORT ARTHUR :												
Brotherhood of Locomotive Firemen	20 00	20 00	.....	.....	.....	.....	70	70	15	.....	.....	monthly
Brotherhood of Locomotive Engineers	30 00	.....	.....	.....	.....	.....	72	.....	30	.....	.....	monthly
PALMERSTON :												
Carriage Builders' Int'l Union, No. 61	10 00	.....	50	.....	10	.....	60	.....	12	weekly	.....	.....
PORT COLBORNE :												
Carpenters and Joiners of America, No. 1168	10 00	.....	45	50	9	10	54	60	90	weekly	.....	.....
SMITH'S FALLS :												
Brotherhood of Trainmen, No. 245	22 00	.....	45	.....	9	.....	54	.....	.....	.....	.....	monthly
Ironmoulders' Union of N. A., No. 201	15 00	.....	50	.....	9	.....	59	.....	14	.....	fortnig'tly	.....
Locomotive Engineers, No. 381	25 00	.....	varies	.....	.....	.....	varies	.....	15	.....	.....	monthly
Brotherhood Locomotive Firemen	17 00	.....	.....	.....	.....	.....	36 to 72	.....	.....	.....	.....	monthly
ST. CATHARINES :												
Brotherhood Carpenters and Joiners, No. 38	12 00	.....	45	.....	5	.....	.....	.....	40	weekly	.....	.....
Barbers' Union, No. 1	12 00	.....	60	.....	16	.....	76	.....	.....	weekly	.....	.....
Bricklayers', Masons' and Plasterers' Union, No. 4	12 00	.....	45	.....	5	.....	50	.....	100	weekly	.....	.....
Painters', Decorators' and Paperhangers' Union of America, No. 407	12 00	.....	45	.....	5	.....	50	.....	30	weekly	.....	.....
ST. THOMAS :												
Order of Railway Conductors, No. 13	25 00	.....	.....	.....	.....	.....	7 days	.....	.....	.....	.....	monthly
Barbers' International Union of America, No. 222	11 00	.....	60	.....	14	.....	74	.....	.....	weekly	.....	.....
Cigarmakers' International Union of America	11 00	.....	40	.....	5 to 6½	.....	.....	.....	14	weekly	.....	.....
Brotherhood Locomotive Engineers, No. 132	25 00	.....	.....	.....	.....	.....	7 days	.....	.....	.....	.....	monthly
Journeymen Tailors' Union of America, No. 141	10 to 12 00	8 00	.....	.....	.....	.....	60 to 72	.....	60	weekly	.....	.....

Table showing average wages per week, and hours of Labor, etc.—*Continued.*

Location and Title of Organizations.	Average Wages per week.		Hours of labor first five days.		Hours on Saturday.		Total Hours per week.		Average Number of Days Idle.	Period of Wage Payments.		
	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.	Organized.	Unorganized.		Weekly.	Fortni'tly.	Monthly.
	$ c.	$ c.										
SARNIA :												
Order of Railway Conductors, No. 189	20 00	.....	.....	.....	.....	.....	When called	ever	.....	.....	.....	monthly
Painters, Decorators and Paperhangers	1 3 00	.....	.....	.....	.....	.....	54	55	30	weekly	.....	.....
STRATFORD :	9 00 to											
International Journeymen Barbers' Union of America	10 00	.....	60	.....	14	.....	74	.....	.....	weekly	.....	.....
Brotherhood of Locomotive Engineers, No. 188	20 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
TORONTO :												
Brotherhood of Railway Trainmen	65 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
International Journeymen Horseshoers' Union, No. 49	13 50	12 00	50	.....	5	.....	.....	.....	.....	weekly	.....	.....
Longshoremen's Union, No. 646	15 00	.....	varies	.....	varies	.....	varies	.....	120	weekly	.....	.....
Glass Bottleblowers' Association of U.S. and Canada, No. 66	25 00	.....	42½	.....	7¾	.....	50¼	.....	90	.....	fortni'htly	.....
Bakers' and Confectionery Workers of America, No. 204	13 00	10 00	45to50	.....	10to12	.....	53to62	.....	.....	weekly	.....	.....
Brewery Workers' Union, No. 304	10 00	.....	50	.....	5	.....	55	.....	.....	weekly	.....	.....
Street Railway Employees' Union, No.	.....	.....	.....	.....	.....	.....	50to60	.....	.....	.....	fortni'htly	.....
Photo Engravers' Union, No. 35	20 00	.....	45	.....	·4	.....	49	.....	.....	weekly	.....	.....
Railway Carmen of America, No. 17	9 00	.....	.....	.....	.....	.....	60	.....	.....	.....	.....	monthly
Theatrical Stage Employees' Union, No. 83	9 00 to 18 00	6 00 to 15 00	.....	.....	.....	.....	36to60	.....	100	weekly	.....	.....
Stone Cutters' Association of N. A	22 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
International Brotherhood of Bookbinders' Union, No. 28	14 50	10 00	47½	.....	4½	.....	52	.....	12	weekly	.....	.....
Builders' Laborers' Union	9 00	.....	40	.....	4	.....	44	.....	.....	.....	fortni'htly	.....
Tile Layers' and Helpers' Union	17 60	.....	40	.....	4	.....	44	.....	40	weekly	.....	.....
Painters' Decorators' and Paperhangers' Union, No. 3	13 20	.....	40	.....	4	.....	44	.....	90	.....	fortni'htly	.....
Carpenters' and Joiners', 1st Branch	13 00	.....	40	.....	4	.....	44	.....	.....	.....	fortni'htly	.....
Marine Engineers, No. 1	12 00	.....	50	.....	10	.....	60	.....	60	.....	.....	monthly
Typographical Union, No. 91	14 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Civic Employees (Teamsters)	12 00	.....	45	.....	5	.....	50	.....	.....	weekly	.....	.....
International Brotherhood of Teamsters, No. 457	10 80	8 80	50	.....	10	.....	60	.....	.....	weekly	.....	.....

	$ c.	$ c.										
TORONTO—*Continued:*												
Printing Pressmen's Union, No. 10	16 50	.....	49	.....	4	.....	53	.....	.....	weekly	.....	.....
Metal Polishers and Buffers, Platers and Brass Workers No. 21	15 00	10 00	50	.....	9	.....	59	.....	15	weekly	.....	.....
International Steam Engineers, No. 152	10 00 to 50 00	.....	40to88	.....	4 to 16	.....	44 to 105	.....	.....	weekly	fortni'htly	monthly
Maltsters' Union, No. 317	11 50	.....	50	.....	10	.....	60	.....	6 mos.	weekly	fortni'htly	monthly
Wallpaper Machine Printers and Color Mixers	.....	.....	52½	.....	5	.....	57½	.....	12	weekly	.....	.....
Piano, Organ and Instrument Workers of America, No. 41	15 00	.....	45	.....	5	.....	50	.....	10	.....	fortni'htly	.....
Order Railway Conductors, Division 344	15 00 to 20 00	.....	m'l'ge	.....	m'l'ge	.....	m'l'ge	.....	.....	.....	.....	monthly
International Cigarmakers' Union, No. 27	10 00	.....	40	.....	4	.....	44	.....	6	weekly	.....	.....
Upholsterers' International Union, No. 30	13 00	11 70	45	.....	4	.....	49	.....	20	weekly	.....	.....
Leatherworkers' Union, No. 5	11 00	.....	45	.....	5	.....	50	.....	14	.....	fortni'htly	.....
WINDSOR :												
Plumbers' Steam and Gasfitters' Union, No. 407	19 00	.....	54	.....	9	.....	54	.....	.....	weekly	.....	.....
Switchmen's Union, 184	19 00	.....	60	.....	12	.....	72	.....	.....	.....	.....	monthly
Brotherhood Locomotive Engineers, No. 390	18 00	.....	.....	.....	.....	.....	.....	.....	40	.....	.....	monthly
Brotherhood Railway Trainmen	18 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	monthly
Bricklayers' and Masons' Union, No. 6	18 00	.....	.....	.....	.....	.....	54	.....	100	weekly	.....	.....
International Journeymen Barbers' Union, No. 451	12 00	.....	55	.....	15	.....	70	82	.....	weekly	.....	.....
WATERLOO :												
Operative Broommakers' Union, No. 7	11 00	.....	50	.....	5	.....	55	.....	.....	weekly	.....	.....
Laborers' (Civic Employees), No. 26	10 50 to 12 00	9 00	50	.....	9	.....	59	.....	90	.....	fortni'htly	.....
WOODSTOCK :					no							
Ironmoulders' Union of North America, No. 249	15 00	11 78	50	.....	work	.....	50	.....	100	weekly	.....	.....
Builders' Laborers	12 15	.....	.....	.....	.....	.....	54	60	60to90	.....	fortni'htly	.....
Bricklayers' and Masons' Union, No. 22	18 00	.....	.....	.....	.....	.....	54	.....	120	.....	fortni'htly	.....
WALLACEBURG :												
Glass Bottleblowers' Association, No. 70	35 00	25 70	42½	.....	7¾	.....	50¼	.....	90	.....	fortni'htly	.....

DIRECTORY OF CENTRAL LABOR ORGANIZATIONS IN ONTARIO.

Name of Organization.	Date organized.	Name of Secretary.	Secretary's Address.	Nights of Meeting.
Berlin :				
Trades and Labor Council.	1900	S. Brunk	Berlin, Box 150....	2nd & 4th Mons.
Brantford :				
Trades and Labor Council.	1886	F. Mather	75 Greenwich street, Brantford.....	1st & 3rd Weds.
Brockville :				
Trades and Labor Council.	1900	Jas. A. Allan.....	Box 36, Brockville .	Each Friday.
Chatham :				
Trades and Labor Council.	1902	Wesley Shaw	Chatham	Alternate Mons.
Collingwood :				
Trades and Labor Council.	....	Chas. J. Hunt.....	Box 441, Collingw'd	.....
Dundas :				
Trades and Labor Council.	....	W. Nelson..	Dundas.....	.....
Galt and Preston :				
Trades and Labor Council.	....	W. G. Seyffert.....	Galt.....	.....
Guelph :				
Trades and Labor Council.	1898	J. J. Dryden.....	Box 138, Guelph ...	2nd & 4th Fridays
Hamilton :				
Trades and Labor Council.	1888	J. W. Board	Box, 323, Hamilton	1st & 3rd Fridays
Kingston :				
Trades and Labor Council.	1896	Jos. Campbell.....	Kingston	1st & 3rd Thurs.
London :				
Trades and Labor Council.	1902	Walter Toll.....	626 Elizabeth street, London.....	1st & 3rd Weds.
Midland :				
Trades and Labor Council.	....	W. Clegg.....	Midland.....	.....
Niagara Falls :				
Trades and Labor Council.	....	H. L. L. Lake.....	Niagara Falls.....	.....
Ottawa :				
National Trades and Labor Council.....	....	S. Kennedy.....	60 Chapel st., Ottawa	.....
Trades and Labor Association	....	C. S. O. Beaudreau.	5 Musgrove street, Ottawa	.....
Peterboro :				
Trades and Labor Council.	....	Walter S. Tighe....	Box 80, Peterboro..	.....
St. Catharines :				
Trades and Labor Council.	...	H. Bliss	Box 34, St. Catharines	1st & 3rd Weds.
St. Thomas :				
Trades and Labor Council.	....	H. W. Smith.....	133 Bright st., St. Thomas.....	.....
Sarnia :				
Trades and Labor Council.	1902	Robt. Burrell.....	149 Essex st., Sarnia	2nd & 4th Weds.
Stratford :				
Trades and Labor Council.	1900	Jos. Laughton.....	Box 311, Stratford..	2nd & 4th Fridays
Toronto :				
Trades and Labor Council.	1881	John Gardner.....	695 Queen st. W....	1st & 3rd Thurs.
Building Trades Council..	.....	Frank C. Weese....	62 Sorauren avenue.	2nd & 4th Mons.
Woodworkers' Council...	.....	C. L. Wilson.....	168 Pearson avenue.	.....
Allied Printing Trades Cn'l	....	Harry Blencoe.....	1006 Dundas st., W.	2nd Tuesday
Garment Workers' Council	....	Frederick Bush	Arthur street.....	.....
Wallaceburg :				
Trades and Labor Council.	....	Jas. Lucas.....	Box 304, Windsor..	.....
Woodstock :				
Trades and Labor Council.	....	A. E. Starr.....	Woodstock	.....

LIST OF NATIONAL AND INTERNATIONAL LABOR ORGANIZATIONS.

With Names and Addresses of General Secretaries, Having Subordinate Organizations in the Province of Ontario.

Trades and Labor Congress of Canada, P. M. Draper, Box 1,017, Ottawa, Ont.

American Federation of Labor, Frank Morrison. 423 G street, N.W., Washington D.C.

Actors' National Protective Union, Lew Morton, 8 Union Square, New York, N.Y.

Allied Metal Mechanics' International Association, John E. Devlin, 421 Valentine Building, Toledo, Ohio.

Bakers' and Confectioners' International Journeymen, F. H. Harzbecker, 268 E. North Avenue, Chicago.

Barbers' International Union, Journeymen, Jacob Fischer, Box 517, Indianapolis, Ind.

Blacksmiths' International Brotherhood of, Robert B. Kerr, Rooms 570-585 Monon Building, Chicago, Ill.

Blast Furnace Workers and Smelters of America, International Association, William J. Clarke, 128 Sandusky street, Buffalo, N. Y.

Boilermakers and Iron Shipbuilders of America, W J. Gilthorpe, Room 406, Portsmouth Building, Kansas City, Kansas.

Bookbinders, International Brotherhood of, J. W. Dougherty, Room 210, 132 Nassau St., New York. N. Y.

Boot and Shoe Workers' Union, C. L. Baine, 434 Albany Building, Boston, Mass.

Brewery Workers, International Union of, Louis Kemper, Rooms 109-110 Oddfellows' Temple, corner Elm and 7th streets, Cincinnati, O.

Brick Tile and Terra Cotta Workers, International Alliance, George Hodge, Rooms 509-10 Garden City Block, Chicago, Ill.

Bridge and Structural Iron Workers, International Association of, J. J. McNamara, 517 Superior Building, Cleveland, Ohio.

Broommakers' International Union, Oliver A Brower, 14 Swan street, Amsterdam, N.Y.

Bricklayers' and Masons' International Union, William Dobson, Room 407, Majestic Building, S. Pennsylvania St., Indianapolis, Ind.

Builders' Laborers' International Union, H. A. Stemburgh, 423 Waverly street, Waverly, N.Y.

Carpenters and Joiners, United Brotherhood, Frank Duffy, P.O. Box 520, Indianapolis, Ind.

Carpenters and Joiners, Amalgamated Society, Thomas Atkinson, 332 East 93rd street, New York, N.Y.

Cement Workers, American Brotherhood of, Thos. K. Ryan, Room 12, 51 Third street, San Francisco, Cal.

Carraige and Wagon Workers, International, Chas. A. Baustian, 36 La Salle, Chicago, Ill.

Carvers' (Wood) Association of North America (International), John S. Henry, 1,220 Third avenue, New York, N.Y.

Carworkers, International Association of, C C. Gaskins, Rooms 1,205-6 Scar Building, 356 Dearborn street, Chicago, Ill.

Cigarmakers, International Union of America, George W. Perkins, Room 820 Monon Block, 320 Dearborn street, Chicago, Ill.

Clerks (Retail), International Protective Association, Max Morris, Box 1,581, Denver, Col.

Coopers, International Union of North America, James A. Cable, Meriwether Building, Kansas City, Kansas.

Commercial Telegraphers' Union of America, The Wesley Russell, 520 Monon Building, Chicago, Ill.

Cloth, Hat and Cap Makers of North America, Max Zuckerman, 74 E. Fourth street, New York, N.Y.

Conductors, Order of Railroad, W. J. Maxwell, Cedar Rapids, Iowa.

Electrical Workers, International Brotherhood of, H. W. Sherman, Corcoran Building, Washington, D. C.

Engineers, International Union of Steam, R. A. McKee, 224 Masonic Temple, Peoria, Ill.

Engineers, Locomotive, Brotherhood of, T. S. Ingraham, 307 Society for Saving Building, Cleveland, Ohio.

Elevator Constructors, International Union, Henry Snow, 40 Park avenue, Chicago, Ill.

Firemen, Locomotive, Brotherhood of, F. W. Arnold, Peoria, Ill.

Firemen, Stationary, Int. Bro. of, C. L. Shamp, Room 2-4, 2,502 N. 18th Street, Omaha, Neb.

Freight Handlers' and Warehousemen's Union of America, P. J. Flannery, 188 West Van Buren street, Chicago, Ill.

Fur Workers of the U. S. and Can., Int. Association, C. E. Carlson, General Delivery, Spokane, Wash.

Garment Workers of America, B. A. Larger, Rooms 116-117 Bible House, New York, N. Y.

Garment Workers' Union, International Ladies, John Alex. Dyche, 25-27 Third avenue, New York, N. Y.

Glass Bottle Blowers, Association of United States and Canada, William Launer, Room 930, Witherspoon Building, Juniper and Walnut streets, Philadelphia, Pa.

Glass Workers, Amalgamated Association, International, Willam Figolah 3,257 Union avenue, Chicago, Ill.

Glass Workers (flint), International, John L. Dobbins, Room 316 Bissel Block, Pittsburg, Pa.

Hatters of North America (United), Martin Lawlor, 11 Waverly Place, Room 15, New York, N. Y.

Horseshoers, International Journeymen, Roady Kenehan, 1,548 Wazee street, Denver, Col.

Hotel and Restaurant Employees and Bartenders, International Alliance, Jere L. Sullivan, Commercial Tribune Building, Cincinnati, Ohio.

Ironmolders' Union of North America, E. J. Denny, 530 Walnut street, Cincinnati, Ohio.

Jewelry Workers' International Union, William F. Shade, 3,032 North Eighth street, Philadelphia, Pa.

Knights of Labor, I. D. Chamberlin, 43 B street, N. W., Washington, D.C.

Lathers, International Union of Wood, Wire and Metal, Wm. Walker, 518 Superior Building, Cleveland, Ohio.

Laundry Workers, International Union, Miss Hannah A. Mahoney, Box 11, Station I, Troy, N. Y.

Leather Workers on Horse Goods, United Brotherhood, J. J. Pfeiffer, 435 Gibraltar Building, Kansas City, Mo.

Leather Workers, Amalgamated International Union of America, John Roach, 52 Forest Building, South 4th street, Philadelphia, Pa.

Longshoremen, International Association, Henry C. Barter, 407 Elks Temple, Detroit, Mich.

Machinists, International Association of, George Preston, 908-914 G street, N.W. Washington, D.C.

Maintenance of Way Employees, International Brotherhood, C. Boyle, 609 Benoist Building, St. Louis, Mo.

Marble Workers, International Association, Henry Roberts, 273 Porter street, Detroit, Mich.

Meat Cutters' and Butchers' Workmen, International Union, Homer D. Call, Lock Box 317, Syracuse, N.Y.

Metal Polishers, Buffers, Plater and Erassworkers' Union, J. J. Cullen, Germania Bank, Spring and Bowery streets, New York, N.Y.

Metal Workers of America (United) International Union, C. O. Sherman, 148 West Madison street, Chicago, Ill.

Mine Workers of America (United), William B. Wilson, 1,106 State Life Building, Indianapolis, Ind.

Musicians, American Federation of, Owen Miller, 20 Allen Building, Broadway and Market streets, St. Louis, Mo.

Plasterers' International Association (Operative). W. A. O'Keefe 301-3-A Park avenue, St. Louis, Mo.

Painters, Decorators and Paperhangers, Brotherhood of America, J. C. Skemp, Drawer 199, Lafayette, Indiana.

Paper Makers United Brotherhood of America, Thomas Millor, 57 Smith Building, Watertown, N. Y.

Patternmakers' League of North America, J. B. McNerney, 25 Third Avenue, New York, N.Y.

Piano and Organ Workers, International Union of America, Chas. Dold, 849 N. Irving avenue, Chicago, Ill.

Plate Printers (Steel and Copper), International Union of America, T. L. Meahan, 319 S. street, N.E., Washington, D.C.,

Plumbers, Gasfitters, Steamfitters and Steamfitters' Helpers, United Association of United States and Canada, L. W. Tilden, 506-7-8 Bush Temple of Music, Chicago, Ill.

Printing Pressmen, International Union, W. J. Webb, 1,007 Putnam avenue, Brooklyn, N.Y.

Photo Engravers Union of N. A., H. E. Gudbransden, 282 Hodge Ave., Cleveland, Ohio.

Quarryworkers, International Union of North America, P. F. McCarthy, Barre, Vermont.

Railway Employees (Street and Electric), Amalgamated Association, W. D. Mahon, 45 Hodges Block, Detroit, Mich.

Railroad Telegraphers, Order of, L. W. Quick, Star Building, St. Louis, Mo.

Railroad Trainmen, Brotherhood of, A. E. King, Cleveland Ohio.

Rubber Workers, Amalgamated Union of America, Clarence E. Akerstrom, 25 Grant street, Cambridge, Mass.

Sheet Metal Workers, Amalgamated International Alliance, John E. Bray, 313 Nelson Building, Kansas City, Mo.

Sawsmiths, National Union, Charles G. Wertz, 351 South Illinois street, Indianapolis, Ind.

Stage Employees (Theatrical), International Alliance, Lee M. Hart, care of Bartl's Hotel, State and Harrison street, Chicago, Ill.

Stereotypers and Electrotypers, International Union of North America, George W. Williams, 534 Warren street, Roxbury District, Boston, Mass.

Switchmen's Union of North America.

Stove Mounters' International Union, J. A. Kaefer, 166 Concord avenue, Detroit, Mich.

Tailors' (Journeymen) Union of America, John B. Lennon, Box 597, Bloomington, Ill.

Teamsters, International Brotherhood of, Edward L. Turly, 147 East Market street, Indianapolis, Ind.

Textile Workers, United of America, Albert Hibbert, P. O. Box 713, Fall River, Mass.

Tile Layers and Helpers (Ceramic, Mosaic and Encaustic), International Union, James P. Reynolds 108 Corry street, Alleghany, Penn.

Tobacco Workers, International Union of, E. Lewis Evans, Room 56, American National Bank Building, 3rd and Main streets, Louisville, Kentucky.

Typographical Union, International, J. W. Bramwood, Rooms 640-50 Newton-Claypool Building, Indianapolis, Ind.

Travellers' Goods and Leather Novelty Workers, International Union of America, Charles J. Gille, Room 25 110, N. Fourth street, St. Louis, Mo.

Upholsterers' International Union of America, Anton J. Engel, 29 Greenwood Terrace, Chicago, Ill.

Woodworkers, Amalgamated International Union of America, John G. Meiler, Bush Temple, Chicago, Ill.

LIST OF LABOR BUREAUS AND WHEN ORGANIZED.

During the past thirty years labor's interests have become so important a factor with representative Governments throughout the world that they deemed it necessary to create Labor Bureaus for the purpose of collecting accurate statistics of the progress of a nation's prosperity arising from commercial, mechanical and agricultural pursuits. The success of these undertakings has proved most satisfactory, as is shown by the following list of Labor Bureaus compiled from official records:—

ONTARIO.—The Bureau of Labor was created by an Act passed by the Ontario Legislature, April 25th, 1900. The Department is under the directions of Hon. J. O. Reaume, Minister of Public Works. John Armstrong, Secretary of the Labor Bureau.

CANADA.—The Department of Labor was established in July, 1900, and practically supersedes the Bureau of Labor of the Department of Agriculture established in 1890, with Mr. George Johnson as chief clerk. The Department is under the direction of the Hon. Adolphe Lemieux. The Act establishing the Department provides for the monthly issuing of a Labor Gazette, the editor of which is W. L. Mackenzie King, B.A., Deputy Minister of Labor. The first number of the Gazette was issued in September, 1900.

Great Britain.—The Labor Bureau of the Board of Trade was established March 2nd, 1886. In 1893 the service was greatly enlarged, and given its present name, "Board of Trade Labor Department." A. Wilson Fox, Chief Secretary. It publishes monthly The Labor Gazette; also annual reports.

New Zealand Department of Labor.—The Right Hon. R. J. Seddon, Minister of Labor. E. Tregear, Secretary, Wellington, N.Z.

New South Wales.—Department of Labor and Industry. T. B. Clegg, Chief Clerk, Sydney, N. S. W.

Queensland—Department of Immigration.—Government Labor Bureau and Relief. Chief Clerk, J. O'Neil Brennan, Brisbane, Queensland.

South Australia Labor Bureau.—Chief Clerk, A. C. H. Richardson, Adelaide, South Australia.

United States Department of Labor.—Established as a Bureau of Labor, January 31st, 1885; made a Department of Labor, June 13th, 1888. Bimonthly Bulletins. Annual reports. Commissioner of Labor, Chas. P. Neil, Washington, D.C.

United States Census Office.—S. N. D. North, Director of Census, Washington, D.C.

Massachusetts Bureau of Statistics of Labor.—Established June 23rd, 1869. Quarterly bulletins. Annual reports. Chief of the Bureau of Statistics of Labor, Chas. F. Pidgin, Boston, Mass.

Pennsylvania Bureau of Industrial Statistics.—Established April 12th, 1872. Annual reports. Chief of Bureau of Industrial Statistics, Robert C. Bair, Harrisburg, Pa.

Connecticut Bureau of Labor Statistics.—Established July 12th, 1873. Abolished July 23rd, 1875. Re-established April 23rd, 1885. Annual reports. Commissioner of Labor, Wm. V. Scoville, Hartford, Conn.

Kentucky Bureau of Agriculture, Labor, and Statistics.—First established March 20th, 1876, as a Bureau of Agriculture, Horticulture, and Statistics; the duties of the Bureau were enlarged and the present name adopted April 2nd, 1892. Biennial reports. Commissioner of Agriculture, Labor and Statistics, H. Vreiland, Frankfort, Ky.

Missouri Bureau of Labor, Statistics and Inspection—Established March 19th, 1879; enlarged March 23rd, 1883. Annual report. Commissioner of Labor, William Anderson, Jefferson City, Mo.

Ohio Bureau of Labor Statistics.—Established May 5th, 1887. Annual reports. Commissioner of Labor, M. D. Ratchford, Columbus, Ohio.

New Jersey Bureau of Statistics of Labor and Industries.—Established March 27th, 1878. Annual reports. Chief of the Bureau of Statistics of Labor and Industries, W. C. Garrison, Trenton, N. J.

Illinois Bureau of Labor Statistics.—Established May 29th, 1879. Biennial reports. Secretary of the Bureau of Labor Statistics, David Ross, Springfield, Illinois.

Indiana Bureau of Statistics.—Established March 29th, 1879. Biennial reports. Chief of the Bureau of Statistics, Geo. H. Stubbs, Indianapolis, Ind

New York Bureau of Labor Statistics.—Established May 4th, 1883; created a Department of Labor, 1902. Commissioner of Labor, P. Tecumseh Sherman, Albany, N.Y. Quarterly bulletins. Annual reports.

California Bureau of Labor Statistics.—Established March 3rd, 1883. Biennial reports. Commissioner of Labor, W. V. Stafford, San Francisco, Cal.

Michigan Bureau of Labor and Industrial Statistics.—Established June 6th, 1883. Annual reports. Commissioner of Labor, M. J. McLeod, Lansing, Mich.

Wisconsin Bureau of Labor Statistics. — Established April 3rd, 1883. Biennial reports. Commissioner of Labor, J. M. Beck, Madison, Wis.

Iowa Bureau of Labor Statistics.—Established April 3rd, 1884. Biennial reports. Commissioner of Labor, E. D. Brigham, Des Moines, Iowa.

Maryland Bureau of Industrial Statistics.—Established March 27th, 1884. Annual reports. Chief of the Bureau of Industrial Statistics, Chas. J. Fox, Baltimore, Md.

Kansas Bureau of Labor Statistics.—Established March 5th, 1885. Annual reports. Commissioner of Labor, W. L. A. Johnson, Topeka, Kan.

Rhode Island Bureau of Labor Statistics.—Established March 29th, 1887. Annual Reports. Commissioner of Labor, Geo. H. Webb, Providence, R.I.

Nebraska Bureau of Labor and Industrial Statistics.—Established March 31st, 1887. Biennial reports. The Governor, *ex-officio* Commissioner. Deputy Commissioner of Labor and Industrial Statistics, Bert Bush, Lincoln, Neb.

North Carolina Bureau of Labor Statistics.—Established February 28th, 1887. Annual reports. Commissioner of Labor, Henry B. Varner, Raleigh, N.C.

Maine Bureau of Labor Statistics.—Established March 7th, 1887, Annual reports. Commissioner of Labor, Samuel W. Mathews, Augusta, Me.

Minnesota Bureau of Labor.—Established as a Bureau of Labor Statistics, March 8th, 1887 ; enlarged and changed to a Bureau of Labor, April, 1893. Biennial reports. Commissionerof Labor, W. H. Williams, St. Paul, Minn.

Colorado Bureau of Labor Statistics.—Established March 24th, 1887. Biennial reports. Commissioner of Labor, E. V. Brake, Denver, Col.

West Virginia Bureau of Labor.—Established February 22nd, 1889. Annual reports. Commissioner of Labor, I. V. Barton, Wheeling, W. Va.

North Dakota Department of Agriculture and Labor. Established October 1st, 1890. Biennial reports. Commissioner of Labor, R. J. Turner, Bismarck, N.D.

Montana Bureau of Agriculture Labor and Industry.—Established February 17th, 1893. Annual reports. Commissioner of Labor, J. A. Ferguson, Helena, Mont.

New Hampshire Bureau of Labor.—Established March 30th, 1893. Biennial report. Commissioner of Labor, Lysander H. Carrol, Concord, N.H.

Washington Bureau of Labor.—Established June 11th, 1897. Annual reports. Commissioner of Labor, C. F. Hubbard, Olympia, Wash.

Idaho Bureau of Labor and Mining Statistics.—Established March 11th, 1895. Annual reports. Commissioner of Labor, T. C. Eglestone, Boise City, Idaho.

Virginia Bureau of Labor and Industrial Statistics.—Established March 3rd, 1898. Annual report. Commissioner of Labor, James B. Doherty, Richmond, Va.

Louisiana Bureau of Statistics of Labor.—Established July 9th, 1900. Biennial reports. Commissioner of Labor, L. Malthus, Shreveport, La.

Oregon Bureau of Labor Statistics and Inspection of Factories and Workshops.—Established June 3rd, 1903. Biennial reports. Commissioner of Labor and Inspector of Factories and Workshops, O. P. Hoff, Salem, Ore.

Argentine Republic.—Francoise Latzina, Directeur General de la Statistique de la Republique Argentina (Minister de l'Interieur), Buenos Ayres.

Austria-Hungary.—Commission Central of Statistics (Minister of Public Instruction). Dr. Karl Theodor von Inama Sternegg, President, Vienna. Department of Municipal Statistics, Dr. Sedlatzek, Chief, Vienna.

Bavaria.—Royal Bureau of Statistics (Department of the Interior). Karl Rasp, Director, Munich.

Belgium.—Royal Bureau of General Statistics (Minister of the Department of the Interior and Public Instruction). Edmund Nicoali, Chief, Brussels.

Brazil.—Dr. R Pompeia, Directeur de Bureau de Statistique des Estats Unis du Bresil (Ministere de l'Interieur), Rio Janeiro.

Bulgaria.—Bureau of Statistics of Bulgaria (Minister of Public Instruction). F. Ivantchoff, Director, Sophia.

Chili.—Don Francisco S. Asta Buruaga, Chef du Bureau Central de Statistique du Chili, Santiago.

Denmark.—Royal Bureau of Statistics (Minister of Finance). Marius de Gad, Director, Copenhagen.

France.—Office du Travail (Ministere du Commerce et de l'Industrie). C. Moron, Directeur, Paris.

Victor Furquan, Chef du Bureau de la Statistique General de France (Ministere du Commerce et de l'Industrie—Office du Travail, Paris.

Germany.—Imperial Office of Statistics (Department of Interior). Dr. Van. Jos. Borght, Director, Berlin.

Herzegovina.—Bureau of Statistics of Bosnia and Herzegovina. Dr. Ferdinald Schmid, Director, Sarajevo.

Italy.—Luiai Bodio, Directeur General de la Statistique du Royaume (Ministere de l'Agriculture, de l'Industrie, et du Commerce), Rome.

Japan.—S. Ishibashi, Chef du Bureau General de la Statistique (Cabinet Imperial), Tokio.

Mexico.—Antonio Penafiel, Directeur General de la Statistique de la Republique (Mexicaine du Fomento), Mexico.

Paraguay.—I. Jasquet, Directeur General de la Statistiane du Paraguay, Assumption.

Portugal.—Ernesto Madeira Pinto, Director General of Statistics of Commerce (Minister of Public Works or Commerce and Industries), Lisbon.

Prussia.—Royal Bureau of Statistics (Minister of the Department of the Interior). Karl Julius Emil Blenck, Director, Berlin.

Office of the Statistics of the City of Berlin. Dr. Richard Bockh, Director, Berlin.

Roumania.—C. E Curpenski, Directeur de la Statistique General du Royaume (Ministere de l'Agriculture, de l'Industrie, du Commerce, et des Domaines), Bucharest.

Russia.—Nicholas Troinitsky, Directeur du Comite Central de Statistique (Minister de l'Interieur), St. Petersburg.

B. Grigorier, Chef du Bureau de la Statistiane Municipale, Moscow.

Saxony.—Bureau of Statistics of the Minister of State. Dr. Victor Bohmert, Director, Dresden.

Spain.—Ing. Francisco de Paula de Arrillaga, Director General of the Geographic Institute and Bureau of Statistics of Spain, Madrid.

Styria.—Bureau of Statistics of Styria. Dr. Ernest Meschler, Director, Gratz.

Sweden and Norway.—Dr. Elis Sidenbladh, Directeur en Chef du Bureau Central de Statistique du Royaume (Minister de l'Interieur), Stockholm.

Anders Nicoali Kiaer, Director du Bureau Central de Statistique du Royaume (Ministere de l'Interieur), Christiana.

Switzerland.—Dr. Louis Guillaume, Directeur du Bureau Federal de Statistiane (Ministere de l'Interieur), Berne.

Uruguay.—Honore Roustan, Directeur du Bureau de la Statistique General, Montevideo.

Stephen Bauer, Office International du Travail, Basle, Switzerland.

REVIEW OF TRADES DISPUTES IN CANADA DURING 1906.

The Official Labor Gazette, in summarizing industrial disputes during the past year in Canada, publishes some valuable statistics of comparison. The following extracts will repay a perusal by those of our citizens who take an interest in economic questions, and particularly will the working classes find food for thought in these tabulated statements which bear directly on the great problem of labor:—

There was an increase in the number and magnitude of trade disputes in Canada during the year 1906, as compared with 1905. Comparing the record of 1906 with previous years, there were in all 138 strikes or lockouts as against 87 in 1905, 103 in 1904, 160 in 1903, 123 in 1902 and 104 in 1901.

Consequent upon the greater number of disputes, there was a marked increase in the number of employees affected. In several cases, the individual disputes involved several thousand employees, but were comparatively of short duration. Among such might be mentioned a strike of rolling mill hands at Montreal, Que., involving some 1,175 employees, a strike of coal miners at Springhill, N.S., involving 1,500 employees, and strikes of the building trades at Winnipeg, Man., and Toronto, Ont., involving 4,000 and 1,800 workmen respectively. A strike of coal miners at Fernie and Michel, B.C., affected 1,600 workmen and continued from September 22 to November 13, and a strike of piano workers at Toronto, Ont., involving some 600 employees, lasted four months.

The most serious dispute of the year was a strike of coal miners at Lethbridge, Alta., its effects being felt over a very large area. Other serious disputes were a strike of sawmill hands at Buckingham, Que., and street railway strikes at Hamilton, Ont., and Winnipeg, Man., in connection with all of which the militia were called out to assist the municipal authorities. In the case of the strike at Buckingham, there was a serious loss of life in consequence of a riot which occurred.

Magnitude of Trade Disputes.

There were approximately 26,014 work-people involved directly and indirectly in trade disputes which began during the year compared with 16,329 in 1905. The numbers for the different months in which the disputes began were as follows:—

TOTAL NUMBER OF WORK-PEOPLE INVOLVED IN TRADES WHICH BEGAN DURING 1906.

	Directly.	Indirectly.	Total.
January	540	4	544
February	298	550	848
March	1,387	363	1,751
April	770	.....	770
May	3,230	300	3,530
June	1,159	350	1,509
July	725	1,200	1,925
August	4,385	150	4,535
September	7,000	150	7,150
October	88	.....	88
November	1,937	1,340	3,277
December	87	.....	87
Total	21,607	4,408	26,014

The following table shows the magnitude of the disputes which were reported to the Department in 1906, according to the months in which they occurred :—

TABLE SHOWING NUMBER OF WORKMEN INVOLVED IN TRADE DISPUTES IN CANADA DURING 1906.

Magnitude.	Number of Disputes.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
2,000 and over	....	....	....	....	....	....	....	....	1	....	....	....	1
1,000 to 2,000	....	....	....	....	1	....	....	2	....	....	1	....	4
500 to 1,000	....	1	1	....	....	....	....	1	2	....	1	....	6
300 to 500	....	....	1	....	....	1	....	1	2	....	1	....	6
200 to 300	....	....	1	1	6	2	....	2	2	....	1	....	15
100 to 200	1	1	....	1	2	3	3	....	2	....	1	....	13
50 to 100	3	1	3	4	7	4	1	1	2	....	2	1	29
25 to 50	4	2	1	3	5	2	2	5	3	2	4	....	32
6 to 25	4	1	1	4	7	2	2	4	1	1	1	1	30
Unknown	....	....	....	....	....	....	....	1	....	....	....	....	1
Total	12	6	8	13	28	14	8	17	15	3	12	2	138

The following table shows the magnitude of trade disputes for the years 1901, 1902, 1903, 1904, 1905 and 1906, according to the number of work-people involved :—

TABLE SHOWING MAGNITUDE OF TRADE DISPUTES ACCORDING TO NUMBER OF WORK-PEOPLE INVOLVED IN 1901, 1902, 1903, 1904, 1905 AND 1906.

Magnitude.	Year.					
	1901.	1902.	1903.	1904.	1905.	1906.
2,000 and over	3	.....	5	2	.....	1
1,000 to 2,000	3	2	5	3	4	4
500 to 1,000	5	1	10	2	5	6
300 to 500	5	8	9	9	4	6
200 to 300	4	7	18	2	4	15
100 to 200	4	15	23	10	15	13
50 to 100	14	21	10	15	17	29
25 to 50	24	28	34	23	17	32
6 to 25	31	37	36	35	21	30
Unknown	11	4	1	2	.....	1
Total	104	123	160	103	87	138

Loss of Time in Working Days.

The loss of time to employees through trade disputes amounted to approximately 489,775 working days. The losses in the different months were as follows :—

Loss in Working Days.

January	2,550	August	39,125
February	7,750	September	96,860
March	20,200	October	87,920
April	28,950	November	78,310
May	45,675	December	16,510
June	38,215		
July	27,710	Total	489,775

Number of Disputes According to Trades Affected.

The following table indicates the number of disputes in the various trades by months during the year 1906 :—

TABLE SHOWING INDUSTRIAL DISPUTES BY TRADES IN CANADA DURING 1906.

Trades.	Number of Disputes.												
	Jan	Feb	Mar	Apl	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Total
Agriculture													
Fishing								1					1
Lumbering					1	1	1	1	1				5
Mining	1		2	1	2		1		2	1	3		13
Building	3		4	3	10	1	2	2	4				29
Metalworking		2	1	1	4	3		5			4	1	21
Woodworking		1		1	1	1		1	1		1		7
Textile				1	2	1							4
Clothing		3			3	1	1				1		9
Food and tobacco preparation	1			2	2	1		1	1				8
Leather					1		1			1			3
Printing and bookbinding	5							1					6
Transport		1	1	1	2		1	1	5		2	1	15
Unskilled				3		3	1	3	1		1		12
Miscellaneous	1					2		1		1			5
Total	12	6	8	13	28	14	8	17	17	3	12	2	138

In the following table a comparison is shown of the trade disputes during the last six years, according to trades and industries, from which it appears the

half of the total number of disputes affected the building, metal and clothing trades :—

TABLE SHOWING INDUSTRIAL DISPUTES BY TRADES IN 1901, 1902, 1903, 1904, 1905 AND 1906.

Trades.	Number of Disputes.						
	1901	1902	1903	1904	1905	1906	Total.
Agriculture	.....	.....	.....	.....	2	.....	2
Building	14	28	44	29	19	29	163
Metal	23	31	17	16	13	21	121
Woodworking	4	10	9	3	2	7	35
Textile	6	1	5	3	1	4	20
Clothing	10	9	11	12	11	9	62
Food and tobacco preparation	9	10	6	11	4	8	48
Leather	1	3	4	1	.....	3	12
Printing and bookbinding	2	3	3	5	7	6	26
Transport	4	4	18	.....	4	14	46
Longshoremen	5	4	4	.....	.....	1	15
Mining	5	3	9	6	12	13	48
Fishing	2	1	1	2	.....	1	7
Unskilled	11	6	9	3	2	12	43
Miscellaneous	8	10	20	10	9	5	62
Total	101	123	160	103	87	138	175

Disputes by Localities Affected.

Of the 138 disputes which occurred during the year, 61 took place in Ontario, 24 in Quebec, 13 in Alberta, 12 in British Columbia and 11 in Nova Scotia. There were eight and nine disputes respectively in New Brunswick and Manitoba. No strikes or lockouts were reported as having taken place in Prince Edward Island and Saskatchewan.

TABLE SHOWING TRADE DISPUTES IN CANADA BY PROVINCES DURING 1906.

Provinces.	Number of Disputes.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Nova Scotia	1	....	1	1	2	....	1	2	....	....	2	1	11
Prince Edward Island	....	....	....	....	....	....	....	....	....	....	....	....	....
New Brunswick	1	....	....	2	2	2	....	....	....	....	1	....	8
Quebec	1	1	2	2	6	2	1	4	4	1	....	....	24
Ontario	6	4	2	8	13	7	4	6	5	1	5	....	61
Manitoba	2	....	1	....	2	...	1	1	2	....	....	....	9
Saskatchewan	....	....	....	....	....	....	....	....	....	....	....	....	....
Alberta	1	...	1	....	2	2	1	2	3	1	....	....	13
British Columbia	....	1	1	....	1	1	....	2	1	....	4	1	12
Total	12	6	8	13	28	14	8	17	15	3	12	2	138

TABLE SHOWING TRADE DISPUTES IN CANADA ACCORDING TO PROVINCES FOR THE YEARS 1901, 1902, 1903, 1904, 1905 AND 1906.

Locality.	Number of Disputes.						
	1901.	1902.	1903.	1904.	1905.	1906.	Total.
Nova Scotia	5	12	7	7	7	11	49
Prince Edward Island	.....	2	.....	.....	.....	.....	2
New Brunswick	3	7	7	2	5	8	32
Quebec	29	20	33	31	21	24	158
Ontario	53	65	83	52	32	61	346
Manitoba	3	8	1	4	9	9	34
Saskatchewan	.....	.....	.....	.....	.....	.....	.....
Alberta	.....	1	5	1	2	13	22
British Columbia	10	8	24	4	10	12	68
More than one Province affected	1*	.....	.....	2†	1‡	.....	4
Total	104	123	160	103	87	133	715

* Dispute affected all provinces in Dominion with exception of Prince Edward Island,
† First dispute affected Ontario, Manitoba, Saskatchewan and Alberta; second, affected same provinces with the addition of British Columbia.
‡ Dispute took place in Quebec and Ontario.

Disputes by Months.

From the preceding tables it may be seen that in 1906 the great number of disputes occurred in the months of May, August and September. The table given below shows, however, that the months of greatest industrial disturbance through disputes during the last six years were, April, May and June.

TABLE SHOWING TRADE DISPUTES IN CANADA BY MONTHS DURING 1901, 1902, 1903, 1904, 1905 AND 1906.

Months.	Number of Disputes.						
	1901.	1902.	1903.	1904.	1905.	1906.	Total.
January	7	8	6	9	6	12	48
February	3	5	12	5	4	6	35
March	13	12	22	9	6	8	70
April	12	20	23	20	8	13	96
May	7	27	29	23	11	28	125
June	23	18	23	9	12	14	99
July	14	7	15	6	13	8	63
August	5	6	11	6	8	17	53
September	5	9	7	3	9	15	48
October	5	4	6	8	3	3	29
November	7	7	3	2	3	12	34
December	3	.....	3	3	4	2	15
Total	104	123	160	103	87	138	715

Causes of Disputes.

Of the 138 disputes which took place during 1906, 55 were occasioned solely by a demand for increased wages, while the question of wages was either the sole or a contributary cause n 82 disputes. There were three disputes due to the refusal of employees to work with non-unionists and 13 due to refusal to work with other particular persons. Recognition of the union was a contributing cause in 13 disputes.

The following table shows the causes of disputes during 1906, according to months:—

TABLE SHOWING CAUSES OF TRADE DISPUTES IN CANADA DURING 1906.

Causes.	Months.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
For increase in wages	1	1	1	8	12	8	3	8	8	....	3	2	55
Against reduction in wages	....	....	....	....	....	....	....	....	....	....	3	....	3
For decrease in hours	1	....	....	2	1	1	....	3	....	....	....	....	8
For increase in wages and decrease in hours	....	....	....	....	2	1	....	....	3	....	1	....	7
For increase in wages and against employment of apprentices	1	....	....	....	....	....	....	....	....	....	....	....	1
For increase in wages and recognition of Union	....	2	....	....	1	....	....	2	....	....	....	....	5
For increase in wages and other changes	....	....	2	1	1	....	1	2	....	....	....	....	7
Against new piecework prices	1	....	....	....	....	....	....	....	....	....	....	....	1
Against increase in hours	1	....	....	....	....	....	....	....	....	....	....	....	1
Against method of payment	....	....	....	....	....	1	1	1	....	....	....	....	3
Against employment of Non-Unionists	....	....	....	....	1	....	....	1	1	....	1	....	3
Against employment of particular persons other than Non-Unionists	1	2	2	1	....	....	....	....	....	2	1	....	13
Against discharge of employees	3	....	....	....	....	....	1	....	1	....	1	....	7
Against discharge of employees and recognition of Union	....	....	....	....	4	1	....	....	....	....	....	....	1
For recognition of Union	....	1	....	....	3	....	....	....	1	....	2	....	7
Against conditions of employment	1	....	1	1	....	....	....	....	....	....	....	....	3
For decrease in hours and change in method of payment	....	....	1	....	....	....	....	....	....	....	....	....	1
Sympathetic	....	....	1	....	....	....	1	....	....	....	....	....	2
For agreement to arbitrate disputes	....	....	....	....	....	....	....	....	1	....	....	....	1
Against individual agreements	....	....	....	....	....	1	....	....	....	....	....	....	1
Unclassified	2	....	....	....	3	1	1	....	....	1	....	....	8
Total	12	6	8	13	28	14	8	17	15	3	12	2	138

In the following table a comparison is made of the causes of disputes during the last six years:

TABLE SHOWING CAUSES OF TRADE DISPUTES IN CANADA WHICH BEGAN DURING 1901, 1902, 1903, 1904, 1905 AND 1906.

Causes.	Number of disputes.						
	1901	1902.	1903.	1904.	1905.	1906.	Total.
For increase in wages	48	54	60	36	30	55	183
Against reduction in wages	10	7	7	7	8	3	42
For decrease in hours	1	7	8	3	3	7	29
For increase in wages and decrease in hours	5	14	18	8	4	7	56
Against employment of particular persons	13	8	13	16	9	13	72
Against conditions of employment	.....	5	5	4	8	3	25
For recognition of Union	.....	5	5	4	1	5	20
Sympathetic	.....	29	10	3	1	2	25
Miscellaneous	16	12	29	21	23	43	144
Total	93	121	155	102	87	138	596

Methods of Settlement.

During the year 130 disputes were definitely terminated, including one which began prior to January, 1906. Five remained unsettled at the end of the year. Three disputes were settled through the friendly intervention of the Department of Labour under the Conciliation Act and one through the mediation of the Ministerial Association of Winnipeg.

The following table shows the methods of settlement by months during 1906 :—

TABLE SHOWING METHODS OF SETTLEMENT OF TRADE DISPUTES IN CANADA DURING 1906.

Methods.	Number of Disputes.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Arbitration	....	....	1	1	....	....	1	....	....	....	1	....	3
Conciliation	....	....	....	1	....	2	....	....	....	....	....	1	4
Negotiations between parties concerned	5	3	1	7	11	9	5	7	9	4	4	2	67
Replacement of men	1	1	...	3	3	5	3	1	1	....	....	....	18
Work resumed on employers' terms (without negotiations)	2	5	....	1	3	2	....	3	5	1	2	4	28
Demands of strikers granted (without negotiations)	....	....	1	....	1	....	....	1	....	....	....	....	3
Work resumed (employer not involved)	....	....	....	....	1	....	1	....	....	....	1	1	4
Employment found elsewhere by strikers	....	....	....	....	....	....	....	....	3	....	....	....	3
Indefinite or unsettled	....	....	....	....	1	2	....	....	1	....	....	5	9
Total	8	9	3	12	20	20	10	12	19	5	8	13	139

A comparison of the methods of settlement of trade disputes during the past six years is given in the following table:—

TABLE SHOWING METHODS OF SETTLEMENT OF TRADE DISPUTES IN CANADA DURING 1901, 1902, 1903, 1904, 1905 AND 1906.

Methods.	Number of Disputes.						
	1901.	1902.	1903.	1904.	1905.	1906.	Total.
Arbitration	5	6	6	4	.....	3	25
Conciliation	6	5	14	5	3	4	37
Negotiations between parties concerned	55	73	77	37	41	67	350
Replacement of men	13	12	15	10	24	18	92
Work resumed on employer's terms (without negotiations)	13	20	26	25	10	28	122
Demands of strikers granted (without negotiations)	.....	.....	19	7	5	3	34
Work resumed (employer not involved)	.....	.....	.....	.....	.....	4	4
Employment found elsewhere by strikers	.....	.....	.....	.....	.....	3	3
Indefinite or unsettled	12	5	12	13	2	9	53
Not reported	.....	.....	1	2	.....	.....	3

Results of Disputes.

Of the 139 disputes which were in existence during 1906, 45 ended in favour of the employers, 41 in favour of the employees and in 23 compromises were reached. The strikers were partially successful in 6 disputes, and in 3 cases there was no change, the employer not being affected Three disputes lapsed, owing to the strikers having obtained employment elsewhere at the wages demanded.

The following table shows the results of trade disputes by months during the year:—

RESULTS OF TRADE DISPUTES IN CANADA DURING 1906.

Results.	Number of Disputes.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
In favour of employers	3	6	1	4	6	7	4	2	4	2	3	3	45
In favour of employees	3	2	....	4	11	4	3	5	4	1	3	1	41
Settled by compromise	1	.....	.....	3	3	6	2	2	3	1	....	2	23
Indefinite (unsettled or terms unknown)	....	1	2	1	....	2	....	2	3	1	1	5	18
Strikers partially successful	1	....	.....	.....	.....	1	1	1	1	...	1	.....	.....
No change, (employers not concerned)	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2	3
Lapsed	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	3

The following table shows the results of trade disputes during 1906 compared with those of the preceding five years :—

TABLE SHOWING RESULTS OF TRADE DISPUTES IN CANADA DURING 1901, 1902, 1903, 1904, 1905 AND 1906.

Results.	Number of Disputes.						
	1901.	1902.	1903.	1904.	1905.	1906.	Total.
In favour of employers	40	35	46	34	37	45	239
In favour of employees	39	46	45	24	24	41	216
Settled by compromise	22	33	46	28	15	23	166
Employees partially successful	.....	.....	.....	6	.....	6	12
No change, (employers not concerned)	.....	.....	.....	.....	1	3	4
Indefinite, (unsettled or terms unknown)	.....	4	10	9	10	22	55
Total	101	118	147	83	87	140	692

ONTARIO INDUSTRIAL STATISTICS.

Full information received from manufacturers are contained in twenty-four tables. In the tables styled "schedule," which number 24, and tabulated from the above 24 tables show the comparison between the gross value of product and the per cent. cost of labor. It will be seen the average daily wage rate for 1906 is $1.48, as against $1.26 for 1905.

The tabulated 153 schedules show that there were employed in the 153 establishments returning answers 8,505 persons. The aggregate number of days in operation were 43,718, and the average number of days were 284 worked by each person. $ 18,473,139 was the gross value of product turned out by these 153 establishments, and the wage bill amounted to $3,458,914, which shows an annual average wage of $406.69, or a daily wage rate of $1.48, an increase of 22 cents per day over 1905. The labor cost per cent., of production, was 23.75, as against 28.25 per cent. in 1905, 17.15 per cent. in 1904, and 25 per cent. in 1903, or a decrease of 4.50 per cent. less in 905, and an increase of 6.60 per cent. over 1904.

In analyzing these figures carefully it will be observed that many industries show a wide margin of difference when the rate of wages paid is compared with the value of product; and this, too, in face of the fact that 22 cents per day over the daily wage rate of last year was obtained.

This disparagement may be accounted for in several ways, as, for instance, the advent of improved machinery, and the incomplete article turned out in one establishment going through the finishing hands in another. Such instances are principally to be found among woodworking, light hardware, textile, clothing and millinery industries.

DEPARTMENT OF PUBLIC WORKS, ONTARIO.

THE BUREAU OF LABOR.

The following questions sent to manufacturers refer to the year ending 31st December, 1905;

1. Name of firm
2. Post office address
3. Character of business
4. Capital employed, including plant
5. Number of days in operation during year
6. Gross Value of product manufactured during year
7. Has the production increased or decreased during year
8. If either, what per cent.
9. Value of materials used in production during year, including fuel, gas, etc
10. Total taxes paid during year
11. Total insurance paid during year

12. Amount invested, if any, in permanent repairs or plant enlargement during year
13. Total number of employees during year (wage-earners only), male female
14. Total wages paid during the year to wage-earners only male female
15. Highest weekly wages paid, male female
16. Lowest weekly wages paid, male female
17. Total number salaried clerks and officials, male female
18. Total salaries paid to clerks, officials, etc., during year
19. Have wages been increased or decreased during the year
20. If either, what per cent.
21. Which class of employees has increase or decrease affected ; if both, what per cent. in either case
22. Do you pay your wage-earners weekly, fortnightly or monthly.

INDUSTRIAL RETURNS

IN DETAIL

FROM MANUFACTURERS

RETURNS IN DETAIL

GAS AND ELECTRIC

Office No.	Capital employed, including plant.	Number of days in operation during year 1905.	Gross value of product manufactured during year.	Production during year. Increase.	Production during year. Decrease.	Value of materials used in production during year, including fuel, gas, etc.	Taxes paid during year.	Insurance paid during year.	Amount invested in permanent repairs or plant enlargement during year.	Total number of employees, wage-earners only. Male.	Female.
	$		$	%	%	$	$	$ c.	$		
1	30,000	365	6,620	.....	.....	.....	150	65 75	382	3	.....
2	55,000	365	29,875	10	.....	.....	.....	856 00	3,000	10	3
3	35,000	365	7,250	.....	.....	1,300	.....	60 00	4,000	2	.....
4	.....	365	.....	6	.....	4,473	.....	.....	2,000	.....	.....
5	10,000	365	4,400	.....	.....	2,087	.....	.....	169	1	.....
6	.....	365	.....	.....	.....	.....	4,010	4,712 89	43,000	125	1
7	132,945	313	33,765	.....	.....	.....	244	798 72	.....	18	.....
8	125,000	365	30,000	10	.....	10,000	1,500	1,400 00	13,000	12	.....
9	66,340	365	16,573	32½	.....	9,275	.....	149 25	6,275	5	.....
10	63,948	365	10,228	72	.....	1,801	.....	143 62	12,966	4	.....
11	201,975	365	63,185	yes.	.....	16,432	3,375	537 00	24,779	28	.....
12	116,000	365	.....	.....	.....	.....	1,700	125 00	400	5	1
13	300,000	365	45,000	10	.....	19,240	500	250 00	30,000	15	2
14	60,000	365	.....	.....	.....	.....	.....	65 00	.....	1	.....
15	28,000	365	.....	.....	.....	.....	.....	16 00	.....	1	.....
16	60,000	365	100,000	25	.....	85,000	809	1,256 00	5,000	25	3
17	15,000	365	4,200	.....	10	.....	1,600	.....	500	1	.....
18	50,000	365	5,000	4	.....	.....	85	135 00	.....	4	.....
19	1,500,000	365	.....	yes.	.....	4,730	10,993	4,809 00	228,386	67	.....
20	.....	300	.....	.....	.....	.....	.....	.....	200	7	1

PRINTING AND PUB

21	100,000	313	100,000	5	.....	30,000	200	700 00	1,500	15	5
22	500	313	400	yes.	.....	.....	5	4 00	.....	.....	.....
23	10,000	300	2,000	.....	.....	500	50	.....	100	5	1
24	6,000	313	.....	.....	.....	.....	20	50 00	.....	7	1
25	6,000	313	.....	.....	.....	.....	400	57 00	.....	5	.....
26	4,000	313	1,026	yes.	.....	300	17	48 00	100	3	.....
27	2,500	307	2,500	.....	.....	450	15	38 00	175	3	1
28	3,500	312	3,500	.....	.....	800	24	18 00	.....	3	2
29	8,000	313	.....	.....	.....	300	35	56 00	100	5	1
30	3,500	313	3,500	15	.....	700	15	22 00	.....	3	2

WOOLLENS AND

31	4,000	156	5,000	.....	.....	1,200	45	35 00	.....	5	2
32	3,000	225	1,500	10	.....	400	19	.....	.....	.....	.....
33	300,000	313	313,632	yes.	.....	145,202	2,448	734 00	19,769	280	m.&f.
34	35,000	300	30,000	25	.....	7,000	180	480 00	2,000	10	25
35	.....	300	30,000	.....	75	.....	.....	.....	.....	10	12
36	70,000	365	250,000	33⅓	.....	.....	.....	1,500 00	15,000	150	m. & f.
37	25,000	300	30,000	15	.....	19,500	64	212 00	.....	6	9
38	150,000	300	142,000	2	.....	85,000	400	800 00	2,500	60	40
39	80,000	290	80,000	.....	.....	48,000	200	800 00	2,500	15	55
40	18,000	240	12,000	.....	10	.....	190	220 00	.....	5	5
41	100,000	312	300,000	10	.....	200,000	416	350 00	.....	100	142
42	.....	180	.....	.....	yes.	.....	.....	.....	.....	4	.....
43	339,000	310	609,410	10	.....	531,148	1,644	6,450 00	28,000	108	153
44	10,000	270	15,000	10	.....	10,000	50	56 00	100	5	5
45	36,000	285	55,000	.....	.....	37,000	185	165 00	3,500	4	50
46	100,000	247	148,000	.....	yes.	90,000	270	30 00	50,000	53	70

FROM MANUFACTURERS.

LIGHT.—TABLE No. 1.

Total wages paid during year to wage-earners.		Total number of salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
Male.	Female.	Male.	Female.		Increase.	Decrease.	Wage-earners.	Clerks, officials, etc.	
$	$			$	%	%	%	%	
1,150	.....	1	.....	125	.....	.....	.....	.....	1
.....	.....	2	1	2,300	.....	.....	.....	.....	2
1,400	.....	1	.....	120	.....	.....	.....	.....	3
.....	.....	4	.....	2,750	.....	.....	.....	.....	4
720	.....	1	.....	40	.....	.....	.....	.....	5
85,000	360	15	1	16,000	15	.....	3c. hr.	15	6
10,967	.....	3	.....	2,092	.....	.....	yes.	.....	7
5,760	.....	4	1	3,000	.....	.....	.....	.....	8
2,905	.....	2	.....	1,091	10	.....	10	10	9
1,812	.....	2	.....	1,092	supt. 11	.....	.....	.....	10
9,570	.....	3	.....	4,400	10	.....	10	.....	11
2,760	540	.....	.....	.....	.....	.....	.....	.....	12
9,794	.....	3	2	2,957	.....	.....	.....	.....	13
600	.....	1	.....	600	.....	.....	.....	.....	14
365	.....	.....	.....	.....	.....	.....	.....	.....	15
9,000	720	5	1	5,000	.....	.....	.....	.....	16
300	.....	1	.....	200	20	.....	20	.....	17
1,832	.....	1	.....	350	.....	.....	.....	.....	18
32,271	.....	31	.....	29,859	7	.....	7	.....	19
3,500	350	7	1	6,000	.....	.....	.....	.....	20

LISHING.—TABLE No. 2.

30,000	m. & f.	.....	.....	.....	7	.....	7	7	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	22
865	150	1	.....	100	5	.....	5	5	23
2,000	208	.....	.....	.....	yes.	.....	.....	.....	24
3,120	.....	.....	.....	.....	.....	.....	.....	.....	25
910	.....	.....	.....	.....	.....	.....	.....	.....	26
770	182	.....	.....	.....	8	.....	8	.....	27
1,200	300	.....	.....	.....	.....	.....	.....	.....	28
2,220	200	.....	.....	.....	10	.....	10	.....	29
1,300	325	.....	.....	.....	10	.....	10	.....	30

COTTONS.—TABLE No. 3.

400	200	.....	.....	.....	.....	.....	.....	.....	31
.....	.....	.....	.....	.....	.....	.....	.....	.....	32
90,469	m. & f.	6	.....	.....	8	.....	8	8	33
4,500	5,000	2	1	.....	.....	.....	.....	.....	34
.....	.....	.....	.....	.....	10	.....	10	.....	35
35,000	m. & f.	.....	.....	.....	.....	.....	.....	.....	36
2,400	1,700	1	.....	300	10	.....	10	10	37
18,000	12,000	2	.....	2,400	5	.....	5	5	38
7,000	10,000	2	1	3,500	5	.....	5	5	39
1,300	600	1	1	480	.....	.....	.....	.....	40
33,042	33,845	3	.....	2,800	10	.....	10	10	41
.....	.....	.....	.....	.....	.....	.....	.....	.....	42
38,251	35,949	18	2	17,244	.....	.....	.....	.....	43
2,500	1,750	.....	1	250	2½	.....	2½	.....	44
2,250	10,500	.....	.....	.....	5	.....	5	.....	45
20,000	14,000	4	2	7,000	yes.	.....	.....	.....	46

RETURNS IN DETAIL.

CARRIAGES AND VEH

Office No.	Capital employed, including plant.	Number of days in operation during year 1905.	Gross value of product manufactured during year.	Production during year. Increase.	Production during year. Decrease.	Value of materials used in production during year, including fuel, gas, etc.	Taxes paid during year.	Insurance paid during year	Amount invested in permanent repairs or plant enlargement during year.	Total number of employees, wage-earners only. Male.	Total number of employees, wage-earners only. Female.
	$		$	%	%	$	$ c.	$ c.	$		
47	.....	...	30	.....	.....	.....	15 00	5 00	.....	.....	.....
48	90,000	300	100,000	15	....	48,000	200 00	1,250 00	3,000	50	.....
49	75,000	300	70,000	25	....	50,000	87 00	700 00	.....	35	.....
50	3,000	300	.....	25	....	.....	50 00	25 00	.....	4	.....
51	1,000	300	3,000	.....	....	1,000	15 00	5 00	20	2	.....
52	5,000	310	4,247	yes.	....	.....	34 37	31 75	.....	4	.....
52½	150,000	300	252,168	19	....	146,000	750 00	2,676 00	5,000	132	.....

LUMBER.

53	60,000	summer	85,000	.....	....	.....	.....	1,400 00	.....	40	.....
54	12,000	120	13,000	50	....	6,500	33 00	170 00	.....	12	.....
55	2,000	200	6,000	.....	yes.	.....	.....	56 00	.....	4	.....
56	25,000	250	34,500	10	....	500	47 28	140 00	.....	30	.....
57	75,000	200	60,000	.....	....	.....	800 00	900 00	.....	100	.....
58	40,000	150	65,000	.....	....	30,000	375 00	1,300 00	.....	45	.....
59	40,000	300	30,000	yes.	....	100	100 00	1,000 00	1,000	50	1
60	30,000	260	12,000	.....	yes.	.....	260 00	350 00	1,000	15	.....
61	8,000	300	10,000	10	....	.....	80 00	.....	1,500	2	.....
62	60,000	196	.....	.....	....	.....	408 00	2,000 00	5,000	75	.....
63	40,000	313	.....	20	....	.....	460 00	500 00	.....	34	.....
64	20,000	290	55,000	.....	....	35,000	100 00	240 00	1,000	25	.....
65	95,000	313	180,000	5	....	.....	1,000 00	2,000 00	500	50	1
66	200,000	240	500,000	.....	....	.....	2,000 00	2,500 00	.....	125	.....
67	10,000	250	15 000	.....	....	1,200	200 00	210 00	1,000	10	1
68	75,000	160	40,000	30	....	30,000	1,000 00	2,000 00	2,000	50	.....
69	40,000	150	60,000	50	....	.....	195 00	1,050 00	.....	40	.....
70	50,000	300	100,000	40	....	50,000	250 00	1,500 00	5,000	80	.....

PLANING MILLS.

71	7,500	250	.....	yes.	....	.....	64 00	.....	.....	7	.....
72	21,000	300	40,000	.....	....	30,000	70 00	200 00	.....	11	.....
73	15,000	300	.....	.....	....	.....	180 00	200 00	.....	11	.....
74	13,500	300	.....	yes.	....	500	50 00	35 00	.....	4	.....
75	11,100	304	10,747	yes.	....	2,500	26 00	112 00	400	8	.....
76	40,000	300	85,000	12	....	60,000	350 00	500 00	.....	35	.....
77	6,000	313	25,000	10	....	10,000	26 00	84 00	100	3	.....
78	15,000	313	60,000	10	....	40,000	425 00	1,200 00	475	11	1
79	18.000	302	15,000	8	....	8,000	165 00	333 00	75	12	.....
80	25,000	200	16,000	10	....	10,000	45 00	165 00	500	10	.....

AGRICULTURAL IMPLE

81	40,000	300	40,000	25	....	32,000	75 00	100 00	100	11	.....
82	50,000	313	60,000	10	....	30,000	200 00	320 00	300	50	.....
83	40,500	302	16,800	7	....	6,000	190 00	550 00	300	20	.....
84	470,500	280	270,000	.....	12	90,000	213 00	1,445 00	4,250	135	.....
85	28,000	300	35,000	25	....	20,000	118 00	100 00	120	10	1
86	13,000	300	23,296	10	....	11,264	.....	.....	.....	15	1
87	350,000	300	400,000	.....	....	250,000	2,750 00	5,500 00	5,000	200	.....
88	135,000	302	150,000	.....	....	54,237	720 00	1,165 00	.....	80	2

FROM MANUFACTURERS.

ICLES—TABLE No. 4.

Total wages paid during year to wage-earners.		Total number of salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
Male.	Female.	Male.	Female.		Increase.	Decrease.	Wage-earners.	Clerks, officials, etc.	
$	$			$	%	%	%	%	
									47
15,500		4	1	7,500	5		5	5	48
14,500		2		1,400	10		10		49
1,500									50
800									51
2,371					yes.				52
62,540		5		8,000	8				52½

—TABLE No. 5.

10,000		2		2,400					53
1,850					8		8		54
1,300									55
7,000									56
35,000		2		1,200	5				57
12,000		3		1,800					58
7,000	300	3		1,360	8		8		59
5,000		3			20		20		60
700					5		5		61
30,000									62
8,960		1		800	yes.		yes.	yes.	63
14,000		1		400					64
20,000	400	5		5,200	10		10	10	65
48,000		5		6,000	yes.				66
4,000	200	1	1	800	10		10	10	67
25,000		2		900	10		10	10	68
20,000		4		4,800					69
35,000		2	1	2,700	5				70

—TABLE No. 6.

									71
4,000									72
4,900									73
2,500					10		10		74
2,817		2		1,000	yes.		yes.		75
19,000		1	1	2,500	5		5	5	76
1,900									77
6,800	260	1	1						78
6,670		1		592	15		15		79
3,000									80

MENTS.—TABLE No. 7.

3,000		1		400	5		5	5	81
21,000		3		1,800	10		5		82
6,400		1		600					83
43,000		15	2	17,200					84
5,000	200	1	1	2,950	5		5		85
6,640	208	1	1	1,008					86
100,000		8	2	12,000	yes.		yes.	yes.	87
39,213	700	6		6,200	10		10		88

RETURNS IN DETAIL

FOUNDRIES.—

Office No.	Capital employed, including plant.	Number of days in operation during year 1905.	Gross value of product manufactured during year.	Production during year.		Value of materials used in production during year, including fuel, gas, etc.	Taxes paid during year.	Insurance paid during year.	Amount invested in permanent repairs or plant enlargement during year.	Total number of employees, wage-earners only.	
				Increase.	Decrease.					Male.	Female.
	$		$	%	%	$	$	$	$		
89	50,000	290	65,000	.....	.....	25,000	172	650	.....	60	.....
90	12,000	310	8,000	.....	Yes.	2,000	175	137	.....	10	.....
91	28,000	300	17,000	30	.....	7,500	110	66	2,500	15	.....
92	40,000	302	51,969	.....	7/10	36,204	190	935	.....	50	.....
93	2,000	200	5,000	10	.....	.....	20	.....	.....	2	.....
94	40,000	313	30,000	10	.....	11,000	150	190	.....	25	.....
95	162,273	248	83,230	10	.....	20,873	499	1,313	.....	50	.....
96	35,000	300	218,090	1/4	.....	175,142	172	182	.....	6	.....
97	125,000	298	240,000	10	.....	110,000	500	700	15,000	180	.....

MACHINERY.

98	36,000	295	75,000	10	.....	31,000	150	475	.....	30	.....
99	40,000	313	100,000	25	.....	60,000	.....	.....	.....	21	3
100	30,000	310	25,000	50	.....	.....	95	500	300	15	.....
101	170,000	300	135,000	18	.....	70,000	.....	905	1,000	70	.....
102	60,000	300	53,000	20	.....	29,000	223	270	1,860	21	.....
103	130,000	300	100,000	10	.....	59,696	306	816	.....	61	.....
104	38,000	300	70,000	15	.....	.....	152	372	1,200	28	.....
105	430,000	300	527,000	.....	2	193,000	1,200	2,087	16,800	400	.....
106	34,000	312	32,500	25	.....	.....	248	117	.....	31	.....
107	275,000	296	426,000	10	.....	127,014	416	2,350	5,000	198	.....

FURNITURE.

108	459,649	300	179,791	20	.....	105,800	176	4,767	20,000	190	.....
109	5,000	.....	.....	.....	.....	.....	65	20	.....	.....	.....
110	10,500	305	.....	Yes.	.....	.....	263	1,204	.....	50	.....
111	280,000	300	250,000	30	.....	94,000	.....	522	900	195	.....
112	70,000	305	.....	15	.....	.....	.....	.....	.....	17	.....
113	46,000	300	65,000	.....	.....	30,000	800	1,600	5,000	45	.....
114	50,000	313	80,000	.....	.....	30,000	300	350	.....	70	.....

WOOD SPECIALI

115	300,000	300	300,000	20	.....	200,000	600	400	2,000	105	35
116	23,500	300	12,500	.....	.....	4,533	70	304	460	25	2
117	.....	306	41,464	25	.....	20,350	116	533	2,953	32	.....
118	10,000	275	7,000	.....	25	3,450	100	100	.....	5	.....
119	6,000	300	6,000	1/6	....	25	24	72	.....	6	.....
120	.....	280	.....	.....	.....	.....	210	200	.....	40	.....
121	15,000	300	40,000	10	.....	20,000	80	125	.....	34	1

FROM MANUFACTURERS.

TABLE No. 8.

Total wages paid during year to wage-earners.		Total number of salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
Male.	Female.	Male.	Female.		Increase.	Decrease.	Wage-earners	Clerks, officials, etc.	
$	$			$	%	%	%	%	
25,000		3	2	4,000					89
3,900									90
7,423									91
19,653		3		2,138	10		10	10	92
									93
14,000		1		900	10			10	94
23,710		5	1	7,423	10		10		95
8,974		5		8,007					96
90,000		9		12,000	7½		7½		97

—TABLE 9.

15,000		2	1	2,100					98
6,800	884	5		4,500	10		10	10	99
		3		2,600	Yes.				100
45,000		9	1	4,915	Yes.				101
12,400		3		1,600	8		8		102
23,037		4	5	7,000					103
8,500		3		2,200	20				104
172,000		23	7	30,000	3		3	3	105
10,780		4		2,700	10		10		106
82,760		10	4	15,814	2½		2½		107

—TABLE 10.

73,991		4	3	12,051	10		10	10	108
									109
17,729		5		7,575	Yes.				110
73,000		10		9,300	5		5	5	111
8,160		5		2,400	10		10		112
22,000		3	1	4,500	5				113
20,000		2		3,000					114

TIES.—TABLE 11.

43,700	8,420	6	5	6,740	5		5	5	115
5,348	240	2	1	1,315	7		7		116
14,619		3		1,862	5				117
1,500		1		520					118
2,000					5				119
16,000		4		2,800					120
5,000	150	1	1	600					121

RETURNS IN DETAIL

Office No.	Capital employed, including plant.	Number of days in operation during 1905.	Gross value of product manufactured during year.	Production during year.		Value of materials used in production during year, including fuel, gas, etc.	Taxes paid during year.	Insurance paid during year.	Amount invested in permanent repairs or plant enlargement during year.	Total number of employees, wage-earners only.	
				Increase.	Decrease.					Male.	Female.
	$		$	%	%	$	$	$	$		
Clothing Manu-											
122	50,000	275	35,000	30	.....	12,000	75	800	500	25	45
123	2,000	150	.....	.....	10	100	8	.....	.....	2	.....
124	17,000	300	40,000	.....	.....	37,000	14	429	.....	7	20
125	30,000	300	80,000	20	.....	29,000	.....	400	.....	10	130
126	15,000	300	4,560	.....	.....	2,280	38	77	.....	3	7
127	60,000	308	14,000	5	.....	12,000	1,021	1,500	.....	15	60
128	500,000	305	543,341	20	.....	189,339	3,821	2,800	3,249	92	210
129	4,000	300	10,000	.....	.....	.....	136	72	.....	.....	12
130	35,000	300	50,000	.....	.....	.....	207	625	.....	30	2
Canning and Pork											
131	.....	58	30,000	200	.....	20,000	36	.....	5,000	25	75
132	100,000	.....	just sta	rted	.....	.....	.....	.....	.....	.....	.....
133	100,000	365	1,500,000	20	.....	.....	255	1,500	5,000	60	.....
134	500,000	300	1,703,381	4	.....	61,379	626	6,119	2,000	.....	.....
145	.....	90	.....	.....	.....	500	56	.....	.....	28	48
136	20,000	300	36,000	.....	.....	600	.....	200	.....	10	.....
137	50,000	270	50,000	10	.....	18,600	300	499	1,180	40	80
138	130,000	210	150,000	20	.....	125,000	44	.....	1,950	40	60
Brick, Tile,											
139	3,000	180	4,000	.....	.....	650	30	5	.....	9	.....
140	20,000	100	17,000	.....	10	2,500	115	88	1,000	20	.....
141	1,200	150	1,800	20	.....	400	12	2	.....	3	.....
Pianos and Organs.—											
142	4,000	90	2,500	50	.....	1,000	.....	54	.....	4	.....
143	600,000	275	500,000	15	.....	200,000	1,700	9,000	22,500	300	.....
144	15,000	300	25,000	.....	.....	20,000	.....	5,000	.....	4	2
145	230,000	300	175,000	.....	.....	70,000	.....	2,000	.....	100	.....
146	100,000	300	66,000	.....	.....	22,687	269	630	.....	30	.....
Paper and											
147	30,000	260	45,756	15	.....	.....	151	.....	2,100	14	.....
148	125,000	300	150,000	8	.....	108,000	286	1,956	2,000	40	8
139	142,500	313	207,689	.....	13	90,591	1,426	2,002	.....	47	19
150	190,000	307	145,485	16	.....	72,289	640	1,014	8,027	43	4
151	690,037	278	442,902	10	.....	252,784	685	1,347	8,000	138	60

FROM MANUFACTURERS.

FACTURERS.—TABLE 12.

Total wages paid during year to wage-earners.		Total number of salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
Male.	Female.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$			$	%	%	%	%	
10,000	3,000	1		1,000	5		5		122
100					25				123
3,000	3,598	3		2,500	10				124
6,000	12,000	4	1	3,000					125
1,365	1,135	3	7	2,500					126
9,000	19,000	5	4	5,600	3		3	3	127
34,865	35,192	70	26	62,500	5		7½	5	128
	2,500				7				129
9,000	450	2		1,700					130

FACTURERS.—TABLE NO. 13.

3,564	m. & f.	2	1	1,950					131
									132
26,000		2	2			4	4		133
59,430		10	1	8,300	3		3		134
3,822		1	1	2,000					135
5,000		1		600	yes				136
4,500	2,500	3		2,720	20		20		137
5,000	8,000	6	1	3,200	15		15		138

ETC.—TABLE NO. 14.

2,300					15				139
7,200					2½		2½		140
500									141

TABLE NO. 15.

600									142
148,000		7	1	15,000	2½				143
3,483									144
40,000		8	2	8,400					145
13,177		2	1	2,162	8		8		146

PULP.—TABLE NO. 16.

7,463		2		2,000					147
20,100	2,000	4	1	4,900					148
21,922	2,496	4	2	8,292					149
18,506	900	3	1	4,257	5		5		150
49,875	11,500	10		13,166	yes		yes		151

RETURNS IN DETAIL

Flour and Grain

Office No.	Capital employed, including plant.	Number of days in operation during year 1905.	Gross value of product manufactured during year.	Production during year.		Value of materials used in production during year, including fuel, gas, etc.	Taxes paid during year.	Insurance paid during year.	Amount invested in permanent repairs or plant enlargement during year.	Total number of employees, wage-earners only.	
				Increase.	Decrease.					Male.	Female.
	$		$	%	%	$	$	$	$		
152	75,000	300	200,000	.....	.....	4,000	380	1,648	.....	22	1
153	24,400	300	226,117	.....	.....	4.009	121	873	1,000	10	1
154	20,000	313	100,000	.....	.....	75,000	300	300	1,200	7	1
155	12,000	300	35,880	.....	.....	31,152	150	347	.....	5	.....
156	25,000	313	40,000	.....	.....	.....	124	450	3,000	4	.....
157	22,000	260	.....	.....	20	.....	.....	.....	900	6	.....
158	150,000	300	19,000	30	.....	.....	200	240	3,500	4	.....
159	20,000	300	40,000	.....	.....	1,400	125	160	.....	3	.....
160	100,000	300	500,000	25	.....	.....	450	1,100	6,000	38	2
161	50,000	313	60,000	.....	Yes.	.....	400	650	.....	11	.....
162	300,000	300	1,200	.....	.....	.....	22	70	.....	.....	.....
163	10,000	300	.....	.....	.....	.....	42	60	.....	3	.....
164	25,000	300	70,000	.....	.....	.....	156	260	.....	6	.....
165	15,000	300	50,000	.....	.....	.....	200	225	.....	8	.....
166	49,000	305	.....	.....	.....	.....	445	247	250	7	.....

Dairy Product.

167	2,000	186	12,111	25	.....	106	9	22	.....	1	.....
168	5,000	215	42,000	.....	5	.....	58	105	150	1	.....
169	2,500	200	15,000	25	.....	100	8	17	.....	4	.....

Bread and Pro

170	60,000	313	180,000	Yes.	.....	.....	471	184	5,750	50	.....
171	40,000	300	120,000	2	.....	92,200	300	327	2,000	32	1
172	20,000	313	.....	Yes.	.....	.....	90	180	.....	6	1

Tanning and Leather

173	35,000	300	100,000	.....	.....	.....	400	375	.....	45	5
174	258,000	365	518,918	20	.....	443,000	911	1,757	8,000	90	.....
175	106,057	313	248,696	24	.....	189,761	236	1,591	6,600	56	.....

Malt Liquors and

176	95,000	365	144,854	20	.....	63,935	1,546	988	816	25	2
177	5,000	.....	.....	.....	.....	.....	20	88	.....	.....	.....
178	10,000	200	10,000	40	.....	.....	100	75	.....	3	.....

FROM MANUFACTURERS.

DEALING.—TABLE 17.

Total wages paid during year to wage-earners.		Total number of salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
Male.	Female.	Male.	Female.		Increase.	Decrease.	Wage-earners.	Clerks, officials, etc.	
$	$			$	%	%	%	%	
9,876	312	3	1	3,120	15		15		152
4,761	572	1		2,000					153
4,700	365								154
2,231		1		500					155
1,612									156
2,592									157
1,700									158
1,700					Yes.		Yes.		159
15,000	m. & f.								160
8,000					Yes.		Yes.		161
									162
1,080					Yes.		Yes.		163
2,800									164
3,800		1		800				20	165
3,200		2		1,050					166

—TABLE 18.

407		1		35		10			167
		2		160					168
1,200					5		5		169

DUCE.—TABLE 19.

22,500									170
15,080	520	2	1	2,700					171
3,000	700								172

GOODS.—TABLE 20.

11,000	700	5	2	4,500					173
38,300		3	1	4,800					174
25,274		5	1	5,937	2		2		175

VINEGAR.—TABLE 21.

12,670	706	5	1	6,080	Yes.		Yes.		176
									177
			1	300	10		10		178

RETURNS IN DETAIL

OIL REFINING, VARNISHES,

Office No.	Capital employed, including plant.	Number of days in operation during year 1905.	Gross value of product manufactured during year.	Production during year.		Value of material used in production during year, including fuel, gas, etc.	Taxes paid during year.	Insurance paid during year.	Amount invested in permanent repairs or plant enlargement during year.	Total number of employees wage-earners only.	
				Increase.	Decrease.					Male.	Femal
	$		$	%	%	$	$	$	$		
179	30,000	313	190,000	6	.....	130,000	590	1,200	4,700	29	.....
180	10,000	313	72,000	.....	.....	66,000	292	75	.....	5	.....
181	2,110,683	305	.....	48	.....	.....	.....	.....	106,565	360	8
182	7,000	305	15,000	15	.....	4,000	20	48	.....	9	6

WIRE FENCING AND

183	40,000	313	80,795	40	.....	27,306	113	411	7,559	80	10
184	125,000	313	75,000	20	.....	30,000	285	790	.....	45	3
185	80,000	225	325,000	25	.....	250,000	200	800	5,000	35	.....
186	150,000	300	300,000	10	.....	125,000	115	450	2,000	55	.....
187	2,500	300	.....	10	.....	.....	.....	14	.....	3	.....
188	100,000	290	250,000	yes	.....	115,639	239	1,054	8,484	68	3

MISCELLANEOUS.—

189	45,380	313	48,829	.....	.....	16,299	102	553	.....	50	.....
190	150,000	300	1,500,000	20	.....	40,000	132	2,922	2,000	90	.....
191	27,000	313	25,000	10	.....	3,000	500	.....	.....	18	.....
192	12,000	125	10,500	10	.....	1,500	90	20	500	30	.....
193	10,000	160	12,000	.....	25	.....	40	70	.....	.....	.....
194	71,000	210	.....	.....	.....	5,200	330	495	.....	52	4
195	2,000	313	.....	.....	.....	.....	14	16	.....	1	9
196	94,880	280	92,000	15	.....	.....	160	400	.....	8	32
197	30,000	200	.....	.....	.....	3,000	.....	300	.....	20	4
198	10,000	313	10,000	.....	.....	.....	.....	.....	.....	3	3
199	20,000	40	27,500	.....	.....	19,748	157	269	.....	16	10
200	50,000	313	.....	.....	.....	.....	500	900	4,000	26	2
201	72,000	300	150,000	12	.....	100,000	380	564	700	12	.....
202	274,397	300	543,996	20	.....	334,908	1,263	2,236	27,618	147	20
203	40,000	305	38,269	yes	.....	22,590	129	200	2,363	14	.....
204	250,000	200	300,000	.....	.....	300,000	2,000	250,000	.....	25	50

FROM MANUFACTURERS.

PAINTS, ETC.—TABLE NO. 22.

Total wages paid during year to wage-earners only.		Total number of salaried clerks and officials.		Total salaries paid to clerks, officials, etc., during year.	Wages during year have—		Class of employees affected.		Office No.
Male.	Female.	Male.	Female.		Increased.	Decreased.	Wage-earners.	Clerks, officials, etc.	
$	$			$	%	%	%	%	
15,000	.....	7	3	6,000	5	.....	5	5	179
3,400	.....	2	.....	2,700	.....	.....	.....	.....	180
.....	.....	38	4	.....	.....	.....	.....	.....	181
2,300	1,300	.....	.....	.....	.....	.....	.....	.....	182

LIGHT HARDWARE.—TABLE NO. 23.

22,000	1,750	2	1	3,500	5	.....	5	5	183
22,000	1,260	3	3	3,240	10	.....	10	10	184
20,000	.....	7	2	6,000	10	.....	10	.....	185
33,700	.....	9	1	9,000	5	.....	5	5	186
600	.....	.....	.....	.....	10	.....	.....	.....	187
37,174	725	5	3	6,700	13	.....	13	13	188

TABLE NO. 24.

17,776	.....	2	.....	2,600	14	.....	.....	.....	189
.....	.....	12	1	15,000	20	.....	20	20	190
8,500	.....	1	.....	1,500	3	.....	.....	.....	191
6,000	.....	.....	.....	.....	10	.....	.....	.....	192
7,000	.....	1	.....	450	.....	25	.....	.....	193
12,500	500	5	.....	4,000	10	.....	10	10	194
700	1,500	.....	.....	.....	.....	.....	.....	.....	195
4,060	7,650	2	.....	1,900	yes	.....	yes	.....	196
10,000	800	2	.....	1,700	.....	.....	.....	.....	197
1,000	600	.....	.....	.....	.....	.....	.....	.....	198
1,153	229	.....	.....	.....	.....	.....	.....	.....	199
12,186	950	1	2	2,700	5	.....	5	5	200
5,800	.....	4	2	8,200	.....	.....	.....	.....	201
60,048	3,936	8	.....	15,766	16	.....	16	.....	202
6,080	.....	5	1	3,650	yes	.....	yes	yes	203
25,000	M. & F.	.....	.....	.....	25	.....	25	.....	204

TABLE SHOWING WAGE RATE AND LABOR COST.

Gas and Electric Light.—Table 1.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			$	$	$ c.	$ c.		
1	4	365	1,275	6,620	318 75	87	.19	81.
3	3	365	1,520	7,200	506 66	1 38	21.	79.
7	21	313	13,059	33,765	621 85	1 98	38.	62.
8	17	365	8,760	30,000	515 29	1 41	29.	71.
9	7	365	3,996	16,573	570 85	1 56	24.	76.
10	6	365	2,904	10,228	464 00	1 27	28.	72.
11	31	365	13,970	63,185	450 64	1 23	22.	78.
13	22	365	12,751	45,000	579 59	1 58	28.	72.
16	34	365	14,720	100,000	432 94	1 18	14.	86.
17	2	365	500	4,200	250 00	68	11.	89.
18	5	365	2,182	5,000	436 40	1 19	43.	57.
	142	Average 360	75,637	321,771	Average 467 90	Average 1 30	Average 25.	Average 75.

Printing and Publishing.—Table 2.

21	20	313	30,000	100,000	1,500 00	4 79	30.	70.
23	7	313	1,115	2,000	158 14	50	55.	45.
26	3	313	910	1,026	342 00	1 09	87.	13.
27	4	307	959	2,500	238 00	77	38.	62.
28	5	312	1,500	3,500	300 00	99	42.	58.
30	5	313	1,625	3,500	325 00	1 03	46.	54.
	34	Average 311	36,102	112,526	Average 477 12	Average 1 52	Average 49.	Average 51.

Woollens and Cottons.—Table 3.

31	7	156	600	5,000	85 71	54	12.	88.
33	280	313	90,469	313,632	323 10	1 03	28.	72.
37	16	300	4,400	30,000	275 00	91	14.	86.
38	102	300	32,400	142,000	317 64	1 05	22.	78.
39	74	290	20,500	80,000	277 02	95	25.	75.
41	245	312	69,687	300,000	284 43	91	23.	77.
43	281	310	91,444	609,410	325 42	1 04	15.	85.
44	11	270	4,500	15,000	409 09	1 51	30.	70.
45	54	285	12,750	55,000	236 11	82	23.	77.
46	129	247	41,000	148,000	317 82	1 28	27.	73.
	1,199	Average 278	367,750	1,698,042	Average 282 43	Average 1 00	Average 21.	Average 79.

Carriages and Vehicles.—Table 4.

48	55	300	23,000	100,000	431 81	1 43	23.	77.
49	37	300	15,900	70,000	429 72	1 43	22.	78.
51	2	300	800	3,000	400 00	1 33	26.	74.
52	4	310	2,371	4,247	592 75	1 91	55.	45.
52½	130	300	62,540	252,168	473 78	1 57	24.	76.
	230	Average 302	104,611	429,415	Average 465 61	Average 1 53	Average 30.	Average 70.

TABLE SHOWING WAGE RATE AND LABOR LOST.—*Continued.*

LUMBER.—TABLE 5.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			$	$	$ c.	$ c.		
53	42	300	12,400	85,000	295 33	98	.14	.86
54	12	120	1,850	13,000	164 16	1 28	.14	.86
55	4	200	1,300	6,000	325 00	1 62	.21	.79
56	30	250	7,000	34,500	233 33	93	.20	.80
57	102	200	37,200	60,000	364 70	1 82	.62	.38
58	48	150	13,800	65,000	287 50	1 91	.21	.79
59	54	300	8,660	30,000	160 37	53	.28	.72
60	15	260	5,000	12 000	333 33	1 28	.41	.59
61	2	300	700	10,000	350 00	1 16	. 7	.93
64	26	290	14,400	55,000	553 84	1 90	.26	.74
65	56	313	25,600	180,000	457 14	1 45	.14	.86
66	130	240	54,000	500,000	415 37	1 73	.10	.90
67	13	250	5,000	15,000	384 61	1 53	.33	.66
68	52	160	25,900	40,000	498 07	3 11	.64	.36
69	44	150	24,800	60,000	563 63	3 75	.41	.59
70	83	300	37,700	100,000	454 21	1 51	.37	.63
	713	Average 236	275,310	1,265,500	Average 364 41	Average 1 66	Average .28	Average .72

PLANING MILLS.—TABLE 6.

72	11	300	4,000	40,000	363 63	1 21	10.	90.
75	10	304	3,817	10,747	381 70	1 22	35.	65.
76	37	300	21,500	85,000	581 08	1 93	25.	75.
77	3	313	1,900	25,000	633 33	2 02	8.	92.
78	12	313	7,060	60,000	588 16	1 87	12.	88.
79	13	302	7,262	15,000	558 51	1 84	48.	52.
80	10	200	3,000	16,000	300 00	1 50	18.	82.
	96	Average 291	48,539	241,747	Average 486 63	Average 1 85	Average 22.	Average 78.

AGRICULTURAL IMPLEMENTS.—TABLE 7.

81	12	300	3,400	40,000	283 33	94	8.	92.
82	53	313	22,800	60,000	430 18	1 37	38.	62.
83	21	302	7,000	16,800	333 33	1 10	41.	59.
84	152	280	60,200	270,000	396 05	1 41	22.	78.
85	13	300	8,150	35,000	626 92	2 08	23.	77.
86	18	300	7,856	23,296	436 44	1 45	33.	67.
87	210	300	112,000	400,000	533 33	1 77	28.	72.
88	88	302	45,413	150,000	510 37	1 68	30.	70.
	567	Average 299	266,819	995,096	Average 443 74	Average 1 48	Average 28.	Average 72.

FOUNDRIES.—TABLE 8.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wages rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			$	$	$ c.	$ c.		
89	65	290	29,000	65,000	446 15	1 53	44.	56.
90	10	310	3,900	8,000	390 00	1 25	48.	52.
91	15	300	7,423	17,000	494 86	1 64	43.	57.
92	53	302	21,791	51,969	411 15	1 36	41.	59.
94	26	313	14,900	30,000	573 07	1 82	49.	51.
95	56	248	31,133	83,230	555 94	2 24	37.	63.
96	11	300	16,981	218,090	1,543 72	5 14	7.	93.
97	189	298	102,000	240,000	539 68	1 81	42.	58.
	427	Average 295	227,128	713,289	Average 619 34	Average 2 09	Average 29.	Average 61.

MACHINERY.—TABLE 9.

98	33	295	17,100	75,000	517 27	1 75	12.	88.
99	29	313	12,184	100,000	420 13	1 34	12.	88.
101	80	300	49,915	135,000	622 68	2 07	37.	63.
102	24	300	14,000	53,000	583 33	1 94	26.	74.
103	70	300	30,037	100,000	433 38	1 44	30.	70.
104	31	300	10,700	70,000	345 16	1 15	15.	85.
105	430	300	202,000	527,000	469 76	1 56	38.	62.
106	35	312	13,480	32,500	385 14	1 23	41.	59.
107	212	296	98,574	426,000	464 97	1 57	24.	76.
	944	Average 301	447,990	1,518,500	Average 471 31	Average 1 56	Average 26.	Average 74.

FURNITURE.—TABLE 10.

108	197	300	86,042	179,791	436 30	1 45	47.	53.
111	205	300	82,300	250,000	401 46	1 33	32.	68.
113	49	300	26,500	65,000	540 81	1 80	40.	60.
114	72	313	23,000	80,000	319 44	1 01	28.	72.
	523	Average 303	217,842	574,791	Average 424 50	Average 1 39	Average 39.	Average 61.

WOOD SPECIALITIES.—TABLE 11.

115	151	300	58,860	300,000	389 80	1 29	19.	81.
116	30	300	6,903	12,500	230 10	76	55.	45.
117	35	306	16,481	41,464	470 88	1 53	39.	61.
118	6	275	2,020	7,000	336 66	1 22	28.	72.
119	6	300	2,000	6,000	333 33	1 11	33.	67.
121	37	300	5,750	40,000	155 40	51	14.	86.
	265	Average 296	92,014	406,964	Average 319 36	Average 1 07	Average 31.	Average 69.

TABLE SHOWING WAGE RATE AND LABOR COST.

Clothing Manufacturers.—Table 12.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profits.
			$	$	$ c.	c.		
122	71	275	14,000	35,000	197 18	71	40.	60.
124	30	300	9,098	40,000	303 26	1 01	22.	78.
125	145	300	21,000	80,000	144 82	48	26.	74.
126	20	300	5,000	4,560	250 00	83	89.	11.
127	84	308	33,600	14 000	400 00	1 29	24.	76.
128	398	305	132,557	543,341	333 05	1 09	24.	76.
129	12	300	2,500	10,000	208 33	69	25.	75.
130	34	300	11,150	50,000	327 49	1 09	22.	78.
		Average.			Average.	Average.	Average.	Average.
	794	298	228,905	776,901	270 51	89	34.	66.

Canning and Pork Factories.—Table 13.

131	103	50	5,514	30,000	53 53	1 07	18.	82.
133	64	365	26,000	1,500,000	406 25	1 11	1.	99.
136	11	300	5,600	36,000	509 09	1 60	15.	85.
137	123	270	9,720	50,000	79 02	29	19.	81.
138	107	210	16,200	159,000	151 40	72	10.	90.
		Average.			Average.	Average.	Average.	Average.
	408	239	63,034	1,739,000	239 85	97	12.	88.

Brick, Tile, Etc.—Table 14.

139	9	180	2,300	4,000	255 55	1 41	57.	43.
140	20	100	7,200	17 000	360 00	3 60	42.	58.
141	3	150	500	1,800	166 66	1 11	27.	73.
		Average.			Average.	Average.	Average.	Average
	32	143	10,000	22,800	260 73	2 04	42.	58.

Pianos and Organs.—Table 15.

142	4	90	600	2,500	150 00	1 66	24.	76.
143	308	275	163,000	500,000	529 21	1 92	32.	68.
144	6	300	3,480	25,000	580 50	1 93	13.	87.
145	110	300	48,400	175,000	440 00	1 46	27.	73.
146	33	300	15,339	66,000	464 54	1 54	23.	77.
		Average.			Average.	Average.	Average.	Average.
	461	253	230,822	768,500	482 35	1 70	23.	77.

TABLE SHOWING WAGE RATE AND LABOR COST.

Paper and Pulp.—Table 16.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wage-rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profits.
			$	$	$ c.	$ c.		
147	16	260	9,463	45,756	528 93	2 03	20.	80.
148	53	300	27,000	150,000	509 43	1 69	18.	82.
149	72	313	32,710	207,689	454 30	1 45	15.	85.
150	51	307	23,663	145,485	463 98	1 51	16.	34.
151	208	278	74,541	422,902	358 38	1 28	17.	83.
	400	Average. 291	167,377	971,832	Average. 463 00	Average. 1 59	Average. 17.	Average. 83.

Flour and Grain Dealing.—Table 17.

152	27	300	13,308	200,000	496 59	1 65	6.	94.
153	12	300	7,333	226,117	611 08	2 03	3.	97.
154	8	313	5,065	100,000	633 12	2 02	5.	95.
155	6	300	2,731	35,880	455 16	1 51	7.	93.
156	4	313	1,612	40,000	403 00	1 22	4.	96.
158	4	300	1,700	19,000	425 00	1 41	8.	92.
159	3	300	1,700	40,000	566 66	1 88	4.	96.
160	40	300	15,000	500,000	375 00	1 25	3.	97.
161	11	313	8,000	60,000	727 27	2 32	13.	87.
164	6	300	2,800	70,000	466 66	1 55	4.	96.
165	9	300	4,600	50,000	511 11	1 70	9.	91.
	129	Average 303	63,849	1,340,997	Average 533 69	Average 1 68	Average 6.	Average 94.

Dairy Produce.—Table 18.

167	2	186	442	12,111	221 00	1 18	3.	97.
169	4	200	1,200	15,000	300 00	1 50	8.	92.
	6	Average 193	1,642	27,111	Average 260 50	Average 1 34	Average 5.	Average 95.

Bread and Produce.—Table 19.

170	50	313	22,500	180,000	450 00	1 43	12.	88.
171	36	300	18,300	120,000	508 33	1 69	15.	85.
	86	Average 306	40,800	300,000	Average 479 16	Average 1 56	Average 13.	Average 87.

TANNING AND LEATHER GOODS.—TABLE 20.

Schedule No.	Number of persons employed.	Number of days in operation.	Amount paid in wages.	Gross value of product.	Employees' average annual earnings.	Employees' daily wages rate.	Per cent. labor cost of gross value of product.	Per cent. cost of material, interest, insurance, taxes, etc., and profit.
			$	$	$ c.	$ c.		
173	57	300	16,200	100,000	284 21	94	16.	84.
174	94	365	43,100	518,918	458 51	1 25	8.	92.
175	62	313	31,200	248,869	503 22	1 60	12.	88.
	213	Average 326	90,500	867,614	Average 415 31	Average 1 26	Average 12.	Average 88

MALT LIQUORS AND VINEGAR.—TABLE 21.

176	33	365	19,456	144,854	589 57	1 61	13.	87.
	33	Average 365	19,456	144,854	Average 589 57	Average 1 61	Average 13.	Average 87.

OIL REFINING, VARNISHES, PAINTS, ETC.—TABLE 22.

179	39	313	21,000	190,000	567 56	1 81	11.	89.
180	7	313	6,100	72,000	871 42	2 78	8.	92.
182	15	305	3,600	15,000	260.00	85	24.	76.
	61	Average 310	30,700	277,000	Average 566 32	Average 1 81	Average 14.	Average 86.

WIRE FENCING AND LIGHT HARDWARE.—TABLE 23.

			$	$	$ c.	$ c.		
183	93	313	27,250	80,795	293 01	93	33.	67.
184	54	313	26,500	75,000	490 74	1 56	35.	65.
185	44	225	26,000	325,000	590 90	2 62	8.	92.
186	65	300	42,000	300,000	656 92	2 18	14.	86.
188	76	290	44,599	250,000	586 82	2 02	17.	83.
	332	Average 288	167,049	1,030,795	Average 623 67	Average 1 86	Average 21.	Average 79.

MISCELLANEOUS.—TABLE 24.

189	52	313	20,376	48,000	391 84	1 25	41.	59.
190	13	300	15,000	1,500,000	115 38	38	1.	99.
191	19	313	10,000	25,000	526 31	1 68	40.	60.
192	30	125	6,000	10,500	200 00	1 60	57.	43.
196	42	280	13,610	92,000	324 01	1 15	14.	86.
199	26	40	1,380	27,500	53 15	1 52	5.	95.
201	18	300	14,000	150,000	777 77	2 59	9.	91.
202	175	300	79,750	584,996	455 71	1 51	13.	87.
203	20	305	9,730	38,269	486 50	1 59	25.	75.
204	75	300	25,000	300,000	333 33	1 11	8.	92.
	470	Average 267	194,848	2,787,094	Average 353 87	Average 1 41	Average 20.	Average 80.

GREAT BRITAIN.

The official report of the Labor Department of the Board of Trade of Great Britain is issued for October, 1906. The report is based on 7,857 returns, viz; 2,725 from employers and their associations, 3,651 from Traders Unions, 396 from local correspondents, and 85 from other sources. As a few selections of the most important items may probably be of interest to the wage earners of Ontario, they are herewith inserted.

Employment during September was on the whole, much about the same as in previous month. Compared with a year ago all the principal industries showed an inprovement with the exception of the boot and shoe trade and the tin-plate trade.

In 271 Trade Unions, with an aggregate membership of 598,611, making returns, 22,826 (or 3.8 per cent,) were reported as unemployed at the end of September, 1906, compared with the same percentage in August, and 5.3 per cent. at the end of September, 1905.

Building Trades.—Employment was dull generally, and worse than a month ago. It was slightly better than a year ago.

Iron and Steel Works.—Employment at iron and steel works in September continued brisk generally, it was considerably better than a year ago The volume of employment at 204 works from which returns were received was 0.9 per cent. greater than September, 1906, than in August, and 4.2 per cent. greater than a year ago.

Tinplate and Sheet Manufacture.—According to returns received, 430 tin-plate and sheet mills were working at the end of September, 1906, as compared with 417 in previous month, and 435 a year ago.

Engineering Trades.—Employment continued good, and better than a year ago. The percentage of Trade Union members employed at the end of September was 2.8 as compared with the same pescentage at the end of September, 1905.

Cotton Trade.—Employment continued very good, and was better than a year ago. Returns from firms employing 134,715 workpeople in September show an increase of 0.5 per cent. in the amount of wages paid as compared with the previous month, and of 3.2 per cent. as compared with a year ago

Woollen Trade.—Employment in this industry remained good, and was better than a month ago; it showed little change compared with a year ago. Returns from firms employing 21,475 workpeople show an increase of 0.2 per cent. as compared with a year ago.

Hosiery Trade.—Employment generally was good and decidedly better than a year ago. Returns from firms employing 16,561 show an increase in wages of 6.3 per cent. compared with a year ago.

Hat Trades.—In the felt hat branch it was fairly good, and better than a year ago.

Boot and Shoe Trade.—Employment in the boot and shoe trade was still slack; it was worse than a year ago

Paper Making Trades.—Employment remained good in these trades, and was better than a year ago.

Printing and Bookbinding Trades.—Employment was quiet in these trades, but rather better than a year ago. In the printing trades the percentage of Trades Union members unemployed at the end of September was 5.2, as compared with same period in 1905.

Furnishing and Woodworking Trades.—Employment continued fair on the whole, and was better than a year ago.

Tailoring Trade.—Employment in the order branch showed the usual seasonal improvement in London, but was slightly more than a year ago; in the Provinces it continued slack. In the ready-made branch employment was fairly good and better than a year ago.

The Thirteenth Annual Report of the Labor Department of the Board of Trade on Changes in Rates of Wages and Hours of Labor in the United Kingdom, has just been published. It deals with the changes of 1905. It also gives certain figures for the first half of 1906.

After four years of falling wages, which resulted in a total net decrease of £227,000 in the aggregate weekly wages of those affected by adopted changes, the first six months of 1905 showed a continuation of the decline, but in the last six months there was an upward movement, and the net result for the year was a fall of about £2,000 only. It is satisfactory to note that the rise which began in the middle of 1905 has continued during the present year, a net increase of £26,600 having been reported to the Department during the first six months of 1906.

For the nine completed months of 1906, the number of workpeople (separate individuals) whose wages were reported to have been changed was 902,106, as compared with 541,656 in the corresponding period of 1905. The changes arranged gave 885,068 workpeople a net increase of £42,266 per week, and 17,008 workpeople a net decrease of £853 per week, while the remaining 30 had upward and downward changes, which left their wages at the same level as the beginning of 1906. The next effect of all the changes was an increase of £41,413 per week, as compared with a decrease of £5,949 per week in the corresponding week of 1905. The trades principally affected were as follows: Building, coal mining, iron mining, quarrying, pig iron manufacture, iron and steel manufacture, engineering and shipbuilding, textile, other metal trades, employees of local authorities.

The changes in hours of labor reported during September, 1906, affected 1,883 workpeople, of whom 1,600 had their working time increased by 1,600 hours per week, and 283 had their working time decreased by 187 hours per week. The total number of workpeople reported as affected by changes in hours of labor since January 1st last, was 36,409, the net decrease in their working hours being 49,260 hours per week.

The Board of Trade Labor Gazette, of London, Eng., tells the state of the labor market for November. A few selected items will make interesting reading for the working men of Ontario.

Employment during November was good in all the principal trades, except the building trade and shipbuilding. The latter industry was affected by the present dispute on the Tees and by the recent Clyde dispute. There has been a considerable demand for pig iron, and blastfurnacemen are busy.

Wages continued to advance in November. The increase in that month affected 160,000 workpeople to the extent of £3,600 per week.

As compared with a year ago, employment showed an improvement in most industries.

In the 271 trade unions, with an aggregate membership of 604,370, making returns, 27,446 (or 4.5 per cent.) were reported as unemployed at the end of November, as compared with 4.4 per cent. at the end of October, and 4.7 per cent. at the end of November, 1905.

Trade Disputes.

Twenty-one new disputes began in November, compared with 24 in October, and 19 during the month of November, 1905. The total number of workpeople affected by disputes which began or were in progress during November, 1906, was 42,639, or 14,309 more than in October, 1906, and 32,828 more than in November, 1905.

The aggregate duration of all the disputes of the month, new and old, amounted to 517,800 working days, or 103,500 more than in October, 1906, and 348,000 more than in November, 1905.

Definite results were reported in the case of 22 disputes, new and old, affecting 36,772 persons. Of these 22 disputes, 10 were decided in favor of the workpeople, 7 in favor of the employers, and 5 were compromised.

Changes in Wages.

The changes reported in November were all advances in wages. They affected nearly 160,000 workpeople, including 110,000 coal miners in Durham, 24,000 workpeople in the engineering trade in the London and Manchester districts, and 7,500 ironstone miners in the Cleveland district. The total computed effect of the reported changes was an advance of nearly £3,600 per week in the wages of those affected. The changes of the previous month affected 96,000 workpeople, the net result being an increase of about £1,160 per week. During November, 1905, the number of workpeople affected was 25,700 and the net result an increase of £1,250 per week.

Two changes, affecting 110,600 workpeople, were arranged by Conciliation Boards, and four changes, affecting 8,700 workpeople, took effect under sliding scales. The remaining changes, affecting 40,600 workpeople, were arranged directly between employers and workpeople or their representatives, two of these changes, affecting about 70 workpeople, being preceded by disputes causing stoppage of work.

Membership of all Trade Unions.

At the end of 1905 the number of Trade Unions known by the Department to be in existence was 1,136, with a total membership of 1,887,823. This membership shows an increase of 1.3 per cent compared with the highest recorded membership, viz., that for 1901. Compared with 1896 there was an increase of over 25 per cent.

The most considerable changes in membership in 1905 were an increase of 18,000 in the textile group of Unions, and a decrease of 20,000 in the building trade Unions. These changes are doubtless connected with the fact that last year the building trades were slack and the textile trades busy.

The number of female members of Trade Unions rose from 125,102 at the end of 1904 to 135,235 at the end of 1905, an increase of 8 per cent. Most of the female Trade Unionists are engaged in the Lancashire cotton industry.

Federations of Trade Unions.

The number of Federations of Trade Unions in existence at the end of 1905 was 89, with a membership of 1,872,019. This is the gross membership, in which some individuals are counted more than once owing to the Unions to which they belong being affiliated to more than one federation. The principal individual federations were the General Federation of Trade Unions, which increased in membership from 396,226 at the end of 1904 to 477,891 at the end of 1905; the Miners' Federation of Great Britain, with 323,799 members; and the Federation of Engineering and Shipbuilding Trades of the United Kingdom, with 270 885 members. The first two of these Federations provide benefit to affiliated Unions in cases of approved disputes.

Trades Councils.

At the end of 1905 there were 231 Trades Councils in existence, as compared with 229 in 1904 and 164 in 1896. The affiliated membership in 1905 was 895,000; in 1904, 875,000 and in 1896, 712,000.

Diseases of Occupations in Factories and Workshops.

The total number of cases of poisoning and of anthrax reported to the Home Office during November was 58, consisting of 52 cases of poisoning, and 6 of anthrax. In addition to the above, 16 cases of lead poisoning (including 3 deaths) were reported during November among house painters and plumbers.

During the eleven months ended November, 1906, the total number of cases of poisoning and anthrax was 645, as compared with 610 in the corresponding period of 1905. The total number of deaths during the same period was 49 in 1906, as compared with 38 in 1905. In addition there were 153 cases of lead poisoning (including 32 deaths) among house painters and plumbers, as compared with 149 (including 25 deaths) in 1905.

Changes in Rates of Wages.

The changes reported in December were all advances. They affected 129,400 workpeople, including 107,000 coal miners in Scotland, 6,000 in Cumberland, 5,500 in the Forest of Dean, and 3,500 iron ore miners in Cumberland. The total computed effect of the reported changes was an advance of about £8,400 per week in the wages of those affected. The changes of the previous month affected nearly 160,000 workpeople, the net result being an advance of nearly £3,600 per week. During December, 1905, the number of workpeople affected was 26,400, and the net result an increase of £660 per week. Four changes, affecting 101,900 workpeople, were arranged by Conciliation Boards, and one change, affecting 600 workpeople, took effect under a sliding scale. The remaining changes, affecting 26,900 workpeople, were arranged directly between employers and workpeople or their representatives; two of these changes, affecting 260 workpeople, were preceeded by disputes causing stoppage of work.

The number of workpeople affected by wages-changes in 1906 was 1,070,000, of whom 1,053,000 received advances amounting to £56,000 per week, and only 5,000 sustained decreases amounting to £500 per week, while about 12,000 had upward and downward changes which left their wages at the same level as at the begining of the year.

Changes in Hours of Labor.

The changes in weekly hours of labor reported during 1906 affected 52,000 workpeople, and resulted in a net reduction in their working time amounting in the aggregate to 84,000 hours per week.

Trade Disputes.

During 1906 there was a considerable increase in the amount of industrial disturbance as compared with other recent years. The number of disputes recorded as commencing during the year was 458, involving 215,446 workpeople, and the aggregate duration of all disputes in progress during the year was 2,989,000 working days. The number of workpeople affected by disputes in 1906 was above the average for the previous ten years (178,494), while the aggregate duration, though higher than the average of the period 1901-5 (2,783,000 working days), was well below that for the period 1896-1900 (7,010,000 working days).

Aggregate Duration.

The aggregate duration in December of disputes that started or were settled in that month was 41,600 working days. In addition, 159,700 working days were lost during December owing to disputes which began before that month, and at the end of the month were still unsettled. Thus the duration in December of all disputes, new and old, was 201,300 working days, as compared with 517,800 in the previous month, and 198,800 in the corresponding month of 1905.

Summary for the Years 1905 and 1906.

Summarized by trades, the number of disputes, the workpeople affected, and the aggregate duration in working days for the years 1905 and 1906, respectively, were as follows:—

Groups of Trades.	1905.			1906.		
	No. of Disputes.	Number of work-people affected.	Aggregate duration in working days.	No. of disputes.	Number of work-people affected.	Aggregate duration in working days.
Building	31	6,637	412,633	18	1,383	59,300
Mining and Quarrying	106	44,791	1,255,514	94	83,435	913,200
Metal, Engineering and Ship-building	70	12,753	467,571	112	40,725	1,108,200
Textile	67	15,786	126,483	123	75,064	763,800
Clothing	29	3,540	71,435	37	8,834	88,600
Transport	11	2,112	67,089	17	1,758	9,900
Other trades	44	7,884	69,464	57	4,257	46,200
Total	358	93,503	2,470,189	458	215,446	2,989,200

Price of Bread.

Returns have been received from 126 of the principal Master Bakers' Associations in the United Kingdom, showing the price of ordinary household bread per 4 lbs. on January 1st, 1907.

The figures in the following Table are based on the returns received from Master Bakers' Associations, and from other sources, and show the highest and lowest predominant prices of bread in the principal districts:

	1st Jan., 1907.			1st Dec., 1906.			1st Jan., 1906.		
	Highest.	Lowest.	Mean.	Highest.	Lowest.	Mean.	Highest.	Lowest.	Mean.
	d.	d.	d.	d.	d.	d.	d.	d.	d.
London:—									
N. & N. W.	5	4	4.7	5	4	4.7	5½	4	4.8
E. & N. E.	5	4	4.6	5	4	4.6	5½	4	4.7
S. E.	5	4	4.6	5	4	4.6	5½	4	4.9
S. W.	5	4½	4.9	5	4½	4.9	5½	4½	5.2
W. & W. C.	5	5	5.0	5	5	5.0	5½	4½	5.3
Northern Counties and Yorkshire	5½	5	5.1	5	4½	5.0	6	5	5.3
Lancs. and Cheshire	5½	4½	4.9	6	4½	5.1	5½	4½	4.9
Midlands	5½	4	4.8	5	4	4.8	5½	4	4.9
Eastern Counties	5½	4½	4.8	5½	4½	4.8	5½	4½	5.0
Southern Counties	6	5	5.4	6	4	5.2	6	5	5.5
S. Western Counties and Wales.	5½	4½	4.9	5½	4	4.9	6	4	5.0
Scotland	6	4½	5.2	6	4½	5.2	6½	4½	5.4

Compared with a month ago there has been no decided change in the predominant price of bread in any district. There have been slight decreases, however, compared with a year ago, in every district except Lancashire and Cheshire, which shows no change. There have been reductions in the price of bred at Aberdeen and at Elgin, where the predominant prices are now 4½d. and 5d. per 4lbs. respectively.

State of the Labour Market in Great Britain for Month of December.

Employment showed little change as compared with the previous month. There was a seasonal decline in some trades, and employment was also affected by the holiday suspensions. The coal-mining industry is very brisk.

There was a rise in wages during the month to the extent of £8,400 per week.

As compared with a year ago there was, on the whole, a slight improvement in employment.

In the 271 Trade Unions, with an aggregate membership of 597,198, making Returns, 29,212 (or 4·9 per cent.) were reported as unemployed at the end of December, 1906, as compared with 4·5 per cent. at the end of November, 1906, and 4·9 per cent at the end of December, 1905.

Building Trades.—Employment continued dull. It was worse on the whole than in November, and showed little general change compared with a year ago.

Coal Mining.—Employment in this industry continued good, and was better than a month ago and a year ago. The average number of days worked per week at the collieries included in the Returns was 5·60 during the four weeks ended December 22nd, 1906, as compared with 5·50 in November, and 5·39 in December, 1905.

Pig Iron Industry.—Employment in this industry in December continued good, and was better than a year ago. Returns relating to the works of 108 ironmasters, employing about 25,000 workpeople, showed that 340 furnaces were in blast at the end of December, as compared with 342 in the previous month and 335 a year ago.

Tailoring Trade.—Employment in the *bespoke* branch in London showed a seasonal decline, and was moderate; it was better than a year ago. In the Provinces it was slack. In the *ready-made* branch it was fair, and slightly better than a year ago.

Hat Trades.—Employment during December in the *Silk Hat* branch was quiet; in the *Felt Hat* branch it was fair, and better than a year ago. The percentage of Trade Union members returned as unemployed at the end of December in the *Silk Hat* Trade 11·6, compared with 10·2 at the end of November, and 15·8 a year ago. The corresponding figures for the *Felt Hat* trade were 5·1, 5·1 and 7·9.

Boot and Shoe Trade.—Employment in the boot and shoe trade showed a further improvement, and was fair; compared with a year ago little change was shown. Returns from firms employing 63,000 workpeople in the week ended December 22nd showed an increase of 4.9 per cent. in the amount of wages paid compared with a month ago, but a decrease of 0.4 per cent. compared with a year ago.

Other Leather Trades.—Employment generally was quiet; worse than month ago, and rather worse than a year ago. Trade Unions with a membership of 3,677 had 7.1 per cent. unemployed at the end of the month, as compared with 5.3 per cent. in November, and 6.1 per cent. in December, 1905. .

Printing and Bookbinding Trades.—Employment was fairly good on the whole except in the last week of the month, when a decline occurred. It was about the same as in December, 1905, In the printing trades the percentage of Trade Union members unemployed at the end of December, was 4.7, as compared with 3.3 in November, and 4.8 in December, 1905. In the bookbinding trades the percentages were 3.2 for December. 2.2 for November, and 3.4 for December, 1905.

Furnishing and Woodworking Trades.—Employment was dull generally, and worse than a month ago, but better than a year ago. Trade Unions with a mempership of 34,979 reported 6.0 per cent. unemployed at the end of December, as compared with 4.8 per cent. a month ago, and 7.1 per cent. in December, 1905.

WORLD'S COMMERCE.

Great Britain Again Leads in Exports as Well as Imports.

The following summary table has been prepared by the British Board of Trade, showing the total imports and exports of merchandise of the principal countries for the first half of this year, for which the particulars can be given. The corresponding figures for 1905 and 1904 are added for comparison:—

Countries.	Imports.			Domestic exports.		
	1904.	1905.	1906.	1904.	1905.	1906.
United States	$515,381,816	$598,112,316	$646,329,598	$669,172,949	$736,121,389	$856,314,206
Germany	766,683,009	794,850,311	980,760,344	604,611,763	630,051,155	695,116,260
Belgium *a*	258,440,349	276,849,517	308,823,223	190,221,752	199,575,165	231,535,575
France	454,623,563	474,021,432	518,371,570	416,825,458	449,100,086	471,753,648
Switzerland	110,727,474	118,567,406	126,188,345	82,765,039	87,309,876	98,736,418
Spain *a*	78,973,562	92,351,570	95,685,123	79,056,292	75,771,405	81,951,860
Egypt	43,341,049	47,068,888	52,499,802	55,205,576	47,983,690	55,697,092
Japan	90,614,230	142,058,001	110,605,812	67,678,415	70,160,330	86,575,035
British India	145,328,289	154,876,362	172,176,170	265,355,645	254,143,229	278,903,981
Canada	122,095,618	128,602,129	149,508,613	75,445,082	77,649,874	102,337,628
United Kingdom	1,143,097,051	1,131,269,220	1,246,573,441	701,345,380	757,743,249	878,860,701
Russia (4 months) *b*	104,566,485	75,854,135	100,010,640	126,217,544	135,244,901	138,620,046
Portugal (2 months)	10,151,519	11,606,602	10,292,647	5,333,684	4,905,432	5,046,560
Italy (5 months)	157,306,942	159,416,807	182,679,334	117,691,436	129,356,436	147,673,942
Austria-Hungary (5 months)	172,429,828	184,445,216	206,694,854	175,140,468	163,003,417	188,469,812
Mexico (4 months)	27,505,458	28,634,486	43,019,860	31,369,459	34,240,694	43,885,976

a Value of principal articles only. *b* European and Black Sea frontiers.

In the case of Germany, Belgium, France, Switzerland, Egypt, Japan, Canada, and the United Kingdom, the import figures given in the above summaries represent imports for home consumption only, *i. e.*, excluding re-exports. In all cases the export figures are intended to represent exports of domestic produce. In most cases, however, they include a certain amount of "nationalized" goods, *i. e.*, goods originally imported for consumption, and which, if dutiable, have been charged with duty, but which are subsequently re-exported.

SUCCESSFUL INDUSTRIAL EFFORT IN BRITISH COLUMBIA.

The most important addition to the manufactures of Vancouver Island was the erection of a large Portland cement factory on Tod's Inlet, ten miles north of Victoria. This enterprise involved an outlay of $75,000. During the year it turned out 72,000 barrels of cement. Recently the capacity of the plant was doubled, hence, unless prevented by shortage of labor, it will turn out 150,000 barrels in 1906. It employs over 200 men.

Mining and Fisheries.

The mining in Vancouver Island in 1905 was not as successful as in previous years. The gross output of coal shows a decided decrease, caused by a seven months' strike at Nanaimo. The non-success of the exploration for ore in the gold-copper mine at Mount Sicker is evident, yet the output of the mine for the year was 32,000 tons, valued at $97,000. The eight metalliferous mines of the island shipped 61,126 tons of ore and gave employment to 202 persons. The mineral product of British Columbia for the year 1905 was valued at $22,461,325, distributed as follows: Gold, $5,902,402; coal, $4,152,930; copper, $5,376,222; lead, $3,399,022; silver, $1,971,818, and all other, $1,658,925. This is an increase in value over 1904 of $3,483,966.

The salmon propagated at the various hatcheries on the Fraser River and tributaries during the past season have been liberated, and an estimate of the number successfully handled is placed at 100,000,000. The total receipts from the fisheries were $6,930,000, divided as follows: Salmon, $5,750,000; halibut, $500,000; cod, $50,000; dogfish, for oil, $50,000; smelts, $25,000; oolakans, $15,000; oysters, $20,000; shellfish, $20,000, and by-products $500,000. There are 69 canneries, representing a total capital invested in buildings, tools, and machinery of over $3,000,000. The amount paid out for labor, etc., was $4,384,000.

The imports into British Columbia from the United States in 1905 were valued, approximately, at $3,000,000, while the exports to that country were nearly $14,000,000. The chief articles of import were iron and steel manufactures, $1,891,441; animals, $409,259; fruit and nuts, $147,684; provisions, $410,110; and breadstuffs, $381,613. The exports to the United States consisted of the following principal articles: Coal, $1,909,752; copper ore, $1,079,214; lead ore, $351,781; pig copper, $2,889,907; timber and lumber, $746,346; and coke, $363,920.

NEW SOUTH WALES.

The latest official report from New South Wales for 1905 contains many interesting labor items. Signs of prosperity generally prevail. This is accounted for in a great measure to the improved condition of the country, and the comparatively good seasons of the last two years having a beneficial effect upon employment in the factories. Although there is an increase of only 97 to record in the number of factories on the register in the Metropolitian District at the close of 1905, the figures being 2,680 compared with 2,583 for 1904, there is a very creditable increase in the number of hands employed therein, the figures being 33,437 males and 15,665 females, for 1904, an increase of 3,519 hands. This is the largest increase since 1900, and the very satisfactory feature of this increase is that females account for only 970, or 27.5 per cent. of the total; while the males number 2,549, or about 72. 5 per cent.

Processes in Stone, Clay and Glass.—This class as a whole shows a total increase of 11 factories and 150 employees, of whom 142 were males and 8 females, the actual number now employed being 2,216 males and 82 females, or 2,298 persons in all. The glass bottle industry is continuing to make good headway, and a further increase is recorded this year of 52 hands, all adult males, the number of hands returned for this year being 333. A slight increase is also shown in the ornamental glass trade, the number of employees now being 128.

Workers in Wood.—Notwithstanding the big increase in this class, as shown in 1904 report, there is a further increase of 87 hands for the past year, making a total of 2,091 hands for the year 1905. Cooperage shows a marked increase from 84 hands in 1904 to 142 in 1905. The joinery trade during the past year has been very evenly maintained, and a slight increase is shown over the very good figures of the previous year. This no doubt is attributable to numerous internal alterations to buildings, and may be taken as a sign of improving times. The number employed in this trade now totals 596. Like the joinery trade, saw-mills also show an advancement over the previous year's good figures, and the number of hands now employed is 843, as against 822 in 1904. Wood-turning also shows improvement.

Metal Works, Machinery.—For the last two years a loss has been recorded for this class, and it is pleasing to note that the tide has turned favourably, although perhaps not to a very large extent. The hands now employed in this class are 4,867, as against 4,662 in the previous year, being an increase of 205 persons, almost all of whom were over 18 years of age.

Foods.—The biscuit trade now gives employment to 183 males and 122 females, or a total of 305 persons, being an increase over the previous year's figures of 31 males and 6 females. The confectionery trade, lying dormant for two years, has made a forward movement, the hands employed being 311 males and 335 females, or an actual increase over the previous year of 4 males and 55 females.

A slight increase is shown in hands employed in tobacco, cigar and cigarette factories. There are now 11 factories, employing 553 males and 383 females.

Clothing and Textile Fabrics, etc.—Woollen mills show an increase of 24 hands, all females, the total now being 90 males and 117 females. The women's shop branch of the clothing trade has taken a big step forward during the year; for whilst at the end of 1904 there were 15 factories employing 39 males and 711 females, there are now 19 factories employing 67 males and 841 females,

being an actual increase of 28 males and 130 females, and of these 21 males and 96 females were over 18 years of age. The 1,877 hands employed in tailoring, 674 males and 1,204 females, are divided among 142 workrooms, and show a slight increase over the figures of the previous year.

Dressmaking and Millinery are classified under two headings, viz.: "Makers' Materials," or those persons who supply the materials and also the labor for making up, and "Customers' Materials," or private dressmakers, etc., who make up only, and to whom materials are brought by the customers. Each of these branches shows an increase in the number of hands employed, 88 being credited to the former and 121 to the latter, making a total increase of 209 hands. The hands employed at the end of 1905 are: makers' materials, 1,941; and customers' materials, 1,241. The hats and caps industry is still on the advance, and shows an increase for the year of 4 factories and 54 males and 134 females. The shirt trade is one that is also a fast growing industry. Almost the whole of the persons engaged in factory work in this line are females, the males being only a small proportion, their work being cut out, etc. Out of 801 persons employed during 1905, only 44 were males.

Books, Paper, Printing.—The figures in these industries show a very fair increase on those of the previous year, the hands employed in 1905 being 2,939 males and 1,321 females, or a total of 4,260 persons, as against 2,821 males and 1,208 females in 1904. This increase is mainly attributable to the advancement in the printing trade, which has been moving forward with the times, not only in hands employed, but with plant and standard of work produced. The hands in employment at the end of the year were: 2,368 males and 719 females, being an increase of 105 males and 91 females over the figures of the previous year.

Child Labor.—Under the Act governing child labor it is provided that no child shall, unless by special permission of the Minister, be employed in any factory, and no such permission shall be given to a child under the age of 13 years. "Child" means any person under the age of 14 years. In 1905 there was a substantial decrease in the number of children under 14 years of age to whom it was found that circumstances rendered it necessary to grant exemption from attending day school in order to obtain work in factories. The "Neglected Children's Act," passed last session, controls, among other desirable reforms, street trading by children up to a certain age. Under this Act girls under 16 years of age are not allowed to engage in street trading, and those previously so employed will no doubt find their way into factories and shops. The Factories and Shops Act limits their employment to forty-eight hours a week in a factory, and the Early Closing Act places a limit on their hours of employment in shops, and provides that they must be allowed a half holiday from 1 p. m. in each week. Under the Neglected Children's Act street trading is permitted by boys between the ages of 14 and 16 years from 6 a. m. to 10 p. m.

Seating Accommodation.—The continual standing in shops, especially during sale time, when it would be considered out of place by most of the shopkeepers for any of their girls to be found resting on the seats ostensibly provided for the purpose, must have a very injurious effect on the large number of young girls so employed. Although the law provides that the shopkeeper shall supply sitting accommodation for all females in the proportion of one seat to every three females employed, and also that he shall allow them to make use of such accommodation at all reasonable times during the day, provided the proper discharge of their duties is not interfered with, it is a deeply rooted idea that the sight of girls resting would give the bargain-seeking public a bad impression of the business; and so the shop-girl has invariably to remain on her feet from morn till eve, rather than incur the displeasure of her employer or his representative by resting during the slack intervals in the business. It remains

for some philanthropic employers to set a good example in this direction, and then it might not be so difficult a matter to persuade others to follow their desirable lead.

New Zealand.

The latest official report on the labor market comes down to September 6th, 1906. All the skilled trades seem to be well employed. In some instances the industries are running short-handed, necessitating overtime work.

Aukland.

Building Trades.—Carpenters and bricklayers have been fairly employed Plumbers have been very busy. Painters are fully employed.

Engineering Trade.---For very few months trade has been dull, and it is therefore cheering to report that there has been a decided improvement, which it is hoped will continue so as to absorb those looking for employment.

Boot Trade (factories).—Business is still good, and all workers are fully employed. As usual the demand is for female operators.

Clothing Trade.---The clothing, shirt and underclothing factories are particularly busy, so much so that several employers intend enlarging their premises to cope with the extra work. Inquiries are made for girls.

Shop-tailoring is quiet, but is no worse than at the corresponding period in previous years. The coming spring will brighten matters.

Saddlery.---Trade has been fairly well maintained during the month, but there are still a number of competent hands out of work.

Carriage Building.---The excellent conditions of trade reported last month still obtain. No tradesmen are idle.

Timber Industry.---The mills are busy. Logs are plentiful, and there is therefore indication of work ahead for some time.

Furniture Trades.---All factories have been busy, and no hands are unemployed. Good upholsterers are scarce.

Unskilled Labor.---Work has been found for all applicants able and willing so undertake heavy work. There is a great demand for farm hands, but suitable applicants are very scarce.

Tolago Bay.

Unskilled Labor.---There are no willing hands idle. Work is plentiful and wages good.

Gisborne.

Building Trades.---All local carpenters are fairly well employed, and there seems every appearance of a better demand ere long. Plumbers and painters are also making good time now that the weather has changed for the better. No tradesmen are out.

Coach-building.---Fairly good.

Boot Trade (factories).---All the trade fairly employed.

Clothing Trade (factories).---Tailoring reported very quiet. Dressmaking also somewhat slack, being accounted for as the quiet season.

Retail Trade.---Business in groceries reported very fair. Clothing quiet, not much doing. Boots only medium.

Napier.

Building Trades.---No unemployed here. Hands were advertised for during the month for new buildings in course of erection.

Engineering Trade.---Satisfactory both as regards work and employment.

Boot and Clothing Trades (factories).---Good business doing.

Retail Trade (general).---All storekeepers fairly busy and getting good prices for their wares.

Unskilled Labor.---Very few men out of employment. Occasionally there are inquiries for work, and men promise to "call again," but fail to do so.

North Palmerston.

Building Trades.---Fairly brisk.

Engineering Trade.---Steady.

Boot Trade (factories).---Steady.

Wanganui.

Building Trades.---A marked improvement in all branches since last report; all local carpenters, bricklayers, plumbers and painters fully employed, but the supply of labor is quite equal to the demand.

Engineering Trade.---Local men are all working full time.

Boot trade is reported as good.

Clothing Trade.---Very quiet, and a number of women are working short time.

Retail Trades.---Grocers, bakers, butchers, fruiterers, and fishmongers report business as very fair.

Unskilled Labor.---Workers are scarce. Settlers who have bush to fell find difficulty in procuring help. All can find employment.

New Plymouth.

Building trades have been fairly busy for some time past.

Miscellaneous.---Sash and door factories still maintain an upward tendency. Cabinetmakers are doing fair business. The same applies to blacksmiths and wheelwrights. Plumbing trade is quiet. Painting and paperhanging show a slight improvement.

Retail Trade.—Clothing shows a decided improvement during the month. Boots—Slight improvement.

Masterton.

Building Trades.---The building and allied trades have been fairly well employed, the large majority of local tradesmen having put in full time.

Engineering Trade.---This trade has been fairly busy, and there are indications that the coming season will be a good one.

Carriage Building.---Steady business is reported, with a tendency towards improvement.

Tailoring Trade.---This trade has continued fairly good during the winter, and reports indicate that it is quite up to the usual standard at present.

Wellington.

The building trade has improved during the period, and there are no carpenters out of employment. Bricklayers are also fully employed. Plumbers and painters are working full time. It is expected that all branches of the trade will be kept busy for some time. Stonemasons have been difficult to obtain during the month. This goes to show they are fully engaged and none out of employment.

Clothing Trade.---Tailoring (men's) is on the quiet side, while ladies' tailoring is very good, especially in the larger factories, where it has been found difficult to execute orders coming to hand within the specified time. Ordered tailoring keeps very steady. Woollen mills still keep very busy, and there is still the difficulty of getting female workers.

Carriage Building.---Steady business doing; all hands fully employed. Electric tramcar building still very active.

Bookbinding and Stationery.---Very busy, and all hands fully employed.

Saddlery and Harness Making.---Steady business in all branches of the trade.

Brick Making.---Exceptionally busy; all hands fully employed.

Furniture Making.---Very busy; all hands fully employed.

Shirt Making.---Business is exceptionally good. Millinery business is also good.

Retail Trade.---Very fair in all lines.

Unskilled Labor.---Employment for pick-and-shovel men, bushmen, general farm laborers, milkers and roustabouts has been good; in fact, men suitable for the work have been exceedingly hard to get. The demand for general farm hands and milkers has set in, but men cannot be obtained.

Blenheim.

Building Trades.---Still very brisk in all branches; no carpenters or bricklayers out of work.

Engineering Trade.---All local hands working full time.

Retail Trade (General).---The shopkeepers generally report that business is very fair.

Railway Works.---Reports state that work is still kept up, and that the men are all satisfied and making good wages. The average is 8s. 3d. per day.

In Blenheim, Nelson, Westport, Greymouth, Hokitika, Christchurch, Ashburton, Timaru, Pamaru, Imedin and Invercargill report building and allied trades very busy on an average. In the lumber and sawmill industries a briskness is reported, with hands wanted. The clothing and textile trades seem to be doing good work, and in some instances extra female help could find employment. General retail trade, including grocery, ironmongery, stationery and fancy goods find a good steady business, and tradesmen express themselves as being satisfied with the condition of trade generally.

SOLDIERS OF THE COMMON GOOD.

By Charles Edward Russell.

Note.—The following is one of several interesting letters from the facile pen of Charles Edward Russell, on the governing forces and economic conditions in New Zealand, where for the past sixteen years, under the new order of things, labor and capital have turned their swords into ploughshares and their spears into pruning-hooks for the good of the Commonwealth, regardless of who's who. The careful solution of the land question has caused prosperity to take the place of expected poverty, and compulsory arbitration governs all labor disputes. The federation of labor is now a benefit to those immediately concerned, and the question of wages and hours of labor are matters looked upon complacently by capital on the one hand, and labor on the other, both knowing full well that quick and unhesitating justice will be meted out impartially by the law of the land. The article is well worth reading by all classes who take interest in the welfare of communities:

"While all the rest of the world resounds with the clamor of conflict, New Zealand is the one country that has achieved peace.

Elsewhere society is disturbed from time to time with strikes, lockouts, labor wars, long and costly interruptions of industry, street riots, and sinister outbreaks of violence. Here is a country without strikes, without labor disturbances, without walking-delegates, pickets, Pinkertons, riots, dead-lines, injunctions, strike-breakers, armed guards, special strike deputies, or militia called out to shoot citizens and defend property.

Elsewhere class lines become more sharply drawn, the bitterness grows between employer and employed, thoughtful men have the gloomiest forebodings of struggle between class and class. In this country alone the antagonism between labor and capital has become chiefly a reminiscence, and employer and workmen begin to look upon their interests as essentially one.

Elsewhere poverty increases, the slums spread, millionaires multiply, accumulation becomes an imminent threat, wealth and power gravitate into the hands of a few, greed preys upon need, feudalism in a new guise seems to gain upon free institutions. In this country alone men look upon these things as upon passed problems not again to bar the way to progress.

In New Zealand is no threat of accumulating millions, no trusts, no money mania, no corrupted legislatures, no extremes of condition, no surfeit, no poverty, (as elsewhere we understand poverty), no destitution, no palaces, no slums, no unemployed, no epidemics, no overcrowding, no pest-holes, no noisome back streets, no heaps of unsanitary dwellings, no spots where people live without light, fresh air, and sunshine, no physical degeneration, no Hooligans, no tramps, no idlers, no trained monkey nor horseback dinners, no life insurance scandals, no tax-dodging corporations, no boodling, no free-pass bribery, no watered stock, no fraudulent bonds, no rebates, no discrimination, no railroad combinations, no private graft for railroad presidents and managers, no refrigerator-car swindles, no immunity baths, no Beef Trusts, no pirate crews, no Morgans, no Rockfellers, no Armours, no smug Cassatts and Depews, no "Systems," and no government afraid to enforce the law upon the rich and the powerful.

In New Zealand slum conditions are so utterly unknown that the death-rate is the smallest among all the nations; the cause of the Common Good has been carried so far that the distribution of wealth is the most even and the average state of the inhabitants the best.

In New Zealand is no evidence anywhere that some men are gathering too much of the fruits of the earth while others can win too little.

In New Zealand, therefore, most of the questions we began by asking seem to have been answered; and judging by results, not by theories, here is the utmost present achievement of modern constructive statesmanship.

Yet it was not always so. Sixteen years ago New Zealand was striding manfully along the old path with the rest of us, ready to create paupers and starve them, ready to create millionaires and adore them, doing the things that generate misery, privation, riots, and splendor in the approved fashion of our own wisdom, following faithfully England's way to the same pit of horrors. Sixteen years ago nothing indicated that New Zealand would not have as many strikes, riots, slums, paupers, idiots, deformed children, starving men and women, teeming subcellars, hideous diseases, trusts, millionaires, tenements, and palaces as the remainder of the civilized circuit has. Few of the young countries gave a more reasonable promise of a harvest, in the fulness of time, of all the sweet fruits of our own precious methods. Yet the promise has been brought to naught, the most hostile critics admit that it has been brought to naught, and nothing observable in the present world outlook ought to equal in interest for the rest of us the story of the saving of that one brand from the burning.

Strange to reflect upon the good that has been born of evil, like flowers in a swamp. The germ of New Zealand's transformation was developed in a strike. Twice before in these chronicles we have come upon this phenomenon. Co-operation was born of the flannel weavers' strike at Rochdale; the reform movement in Australia was evolved from the silver-miners' strike at Broken Hill. In the same way democracy has often been furthered from the most uncouth and least promising sources when the schools and learned writers advanced it not an inch. To make this particular instance even stranger, the strike that changed New Zealand's destiny was sympathetic. In July, 1890, the maritime industries of Australia had suffered a great and historical strike for a re-adjustment of wage scales. One month later all the maritime workers in New Zealand left their work, not because they had any grievances, but merely to help the strikers in Australia. Outside of organized labor all New Zealand blazed up at this arbitrary action. Such a manifestation of public wrath had not been known since the colony was founded. That men should strike for a cause of their own was understandable, but that having no complaint they should cripple trade, stop industry, imperil property, and cause general distress merely because 1,200 miles away other men were striking seemed an intolerable outrage. Men that had never done manual labor were moved to offer themselves in menial capacities to the steamship lines; merchants and their clerks went upon the piers and handled freight, college students shoveled coal, professional men left their wonted employment to hunt for strike-breakers, offers of assistance came from the unlikeliest quarters. At any cost the strike must be broken, that was the feeling of the community. Very large interests were risked, for the maritime enterprises of New Zealand are vital to it; not only because it has great trade with Australia and other lands, but because usually the chief and sometimes the only transport between its towns is by the sea. Yet men said that there must be no compromise, no matter who suffered. More than the ruin of trade impended, for the strike had included all workers in and about a ship, excepting only the captain, and when the

places of engineers, mates, and stokers had been filled with green and incompetent men the peril to life and goods was great along those rocky shores.

But the iron was up in the blood. The people furnished the strike-breakers, and took the risk of their bad work, and the result was the rout of the strikers.

All this seemed well enough. But the cost of the strike had been for a small country, enormous. In many a tradesman's balance sheet holes had been made that months of fair trade could hardly cover. Moreover the victors were plagued with the sight of the vanquished, often in acute distress. The strike had left many wounds, for that is the rule with strikes. Labor men were sore and sullen in defeat; and the merchants were angry at their losses.

Now there was in New Zealand a certain class of thoughtful men, interested in public affairs and studious of economic tendencies, that looked beyond the fighting armies of capital and labor, and without prejudice to either side saw that these things would not do. Clearly, strikes did not pay; no matter who won, victory was too costly and too empty. Much better than the merchants they could understand a sympathetic strike because they could understand how men, feeling a sense of common struggle against common injustice, might be drawn by a bond of fellowship into a battle in which they had no direct concern. But, whatever might be the cause, a strike was not in the line of progress. Strikes, they said, should be abandoned everywhere, and first in New Zealand.

A handful of men with these convictions, and some others, determined to see if the civilization of the ballot-box could not be made to prevail upon the savagery of the strike. They drew together some of the labor leaders, organized a party, joined hands with the Liberals, and began a campaign for improved conditions.

It was a good ripe time. The colony was self-governing, with a responsible ministry and with parliamentary elections every three years. An election came on the year after the strike, interest in politics suddenly revived, there was a brief and animated struggle, and the Labor combination won by a slender majority; and New Zealand quickly learned that the new government, with John Ballance at its head, meant very different things,

The men that thus came to power were not like men that had ever ruled in any English colony in the world. They were not of that governing class that has so long dominated England; they were not even educated men in the narrow sense of the scholiast. As a rule, they had earned their bread with the toil of their hands; they had known what labor means, the sweet and the sour of it. They were of the men that think while they push the plane and read while other men sleep; workingmen like that broad-faced, big-hearted Alexander McLeod that blessed Woolwich with co-operation, thoughtful men like the Rochdale pioneers. Out of their reading and thinking they had evolved a certain creed, and gradually they began to put it to the practical test of experience. To them it seemed clear that modern conditions and developments had made useless the old ideals of government. To open the door to the unrestrained operations of capital was merely to make certain that in a few years a few men would usurp the means of life and the majority would be in want; and wherever this happened the power of accumulated wealth practically abolished free government. They concluded from their reading that in reality the struggle against the forces that oppress mankind was not ended, but only begun. They believed that the first question worth considering was whether capital and the money mania were to be allowed to enslave the majority of the race, and they felt certain that mankind could not follow far its present road without reverting to purely medieval conditions.

It did not seem to them that these tendencies are necessary. They did not quite believe in the gospel of palaces and slums, surfeit and starvation, too much and too little. The notion that three-fourths of humanity must live in want and misery and one-tenth of it to dwell in atrophying luxury seemed to them monstrous. They did not admit that because a condition has existed for centuries it is necessarily sacred or of divine origin or incapable of improvement. They thought it might be possible to erect in one corner of the earth a country where the fortunate should not prey upon the unfortunate, nor absorb the public resources; where slums need not flourish, labor need not be a badge of disgrace, the public service need not be corrupted, and life might be decent and clean and safe.

To them it seemed that the kind of government that would bring about better conditions would reverse immemorial custom and give more of it attention to the poor, the obscure, and the unfortunate than it gave to the eminent and the rich. They thought it was of more practical importance to the race to prevent epidemics and to alleviate misery than to adorn society or to collect campaign subscriptions, and they resolved that when the government of New Zealand should pass into their hands they would see if they could not do something to obliterate poverty and restrain the predations of wealth. To this task they went without the assistance of the blessed science of political economy, but they had something that seems almost as good. They had plain common sense high courage, and sincerity of purpose.

Many of the ideas that they have since put into practice were very vague with them when they began; but one thing seemed clear enough. They believed that most of the evils of the world resulted from the uneven distribution of wealth, and that they ought to do something to help the men that were getting too little to get more. A primitive way to help was to keep them in good physical condition; so the campaign of the new government opened with bills to improve health. Wherever two or more persons were employed, was the sweeping declaration of these measures, there must be adequate light, fresh air, approved sanitation, and ample fire escapes. If meals were eaten upon the premises employers must provide dining-rooms with tables, chairs, and facilities for heating water, so that there should be no more eating of cold luncheons from tin buckets while seated upon work benches. Inspectors were provided to see that these regulations were strictly enforced, and heavy penalties were laid upon employers that neglected them. Working men were protected in other ways. For the first time in New Zealand they were allowed to file mechanics' liens upon an owner's property in default of payment by a contractor, and the laws about employers' liability for accident were amended so as to give an injured workman a chance to recover damages. Previously such laws had been devised, as they generally are with us, to enable the employer to dodge his responsibility.

All these changes merely paved the way to greater matters. The new government next took in hand the crying evil known to us as the "Company Store" and abolished it. Did you ever consider the company store? It is a beautiful thing for highway robbery, safe, efficient, and immensely profitable. A good reliable company store is better any day than a sand-bag or brass knuckles—never leaves a mark and the police don't bother about it. Once New Zealand had many company stores, and, as with us, one of their sweet results had been that some of the families enslaved to these delectable institutions never saw any money from one year's end to another's. They were continually in debt at the company store; whatever they needed they must get from the company store; the only inheritance they could leave to their children was this lifelong and hopeless account at the company store. Even when the purchases were made at reasonably fair prices the thing was a swindle. The em-

ployer owned the store. He therefore in effect paid the men in goods at retail prices that he had bought at wholesale prices. But the cases where the prices were reasonable were few, and where the employer made deligent use of his opportunity the game was burglary. Some years ago, when I was investigating the anthracite coal-mines of Pennsylvania, I found that the run of prices at the company stores average thirty per cent. higher than they should have been, and and the miners were compelled to buy at those prices on be discharged. At the same time the law of the State absolutely prohibited company stores, and almost every coal-mine had one. Well? What would you expect? It was Pennsylvania, you know, and names were so easy!

In New Zealand when they pluck up an old villiany they fetch away roots and all. They didn't mamby-pamby with negligible laws prohibiting company stores, but made company stores impossible by providing that all wages must be paid in cash, and nothing but cash, and without deductions for indebtedness. Thus, if a workman's wages were $30 a month and he owed $16, it was not possible to give him $14 and a receipt for the amount he owed. He must be paid in full $30, even if he returned $16 of it the next moment. Also, wages must be paid within twenty-four hours of a demand for them, and wages of less than $10 a week were exempt from attachment from any source, a provision that practically abolished the loan shark.

Upon these changes as seeming to indicate a sentimental philanthropy, the conservative element looked with mild disfavor; but when the reformers undertook to carry out their ideas of the distribution of wealth by a radical and unprecedented interference with private affairs, there was a howl of dismay and a reasonable protest. Political economy says you must not attempt to regulate the number of hours that a man may work. It cites instances where governments have tried to do this and have failed, and it demonstrates clearly that these matters must be left to the mutual consent of employer and employed. Moreover, there is the terrible freedom of contract; any attempt to limit the working day is a violation of that holy of holies; no less a body than the Supreme Court of the United States has said so and sternly rebuked audacious heretics that thought otherwise. But the New Zealanders had another kind of a Supreme Court, and they said that if freedom of contract compelled men to work too long hours for too little pay, then it would be better for the poor blind world to try to stumble along bereft of the precious boon of that freedom. So they broke into the shrine and rioted about in it in the most shocking manner. They passed a law so emphatically constituting eight hours and no more a day's work in all industries that neither ingenuity nor hardihood could evade it. Some exceptions were made in the necessary cases of men engaged in emergency work, as sometimes in the railroad train service, and salesmen and saleswomen were specially provided for in another act; but for all other workers eight hours became the working day. For all labor in excess of eight hours and for all labor on holidays, workers must be paid at the rate of one and a half times their usual compensation. All employers were obliged to keep records of all overtime work, the names of the men so employed, the overtime they worked, their regular wage-rate, the amounts paid to them for overtime; and copies of all these records must be filed with the colonial department of labor.

In all trades, industries, and businesses, a weekly half-holiday was decreed for the round year. Choice of the day was made locally optional, but in each of the labor districts into which the colony had been divided all stores, shops, and factories must close for one day in the week at one o'clock and not be open until the next morning. For retail stores the length of the day was fixed at nine hours including an hour for luncheon for each employee. All overtime and

holiday work in all stores, retail and wholesale, was ordered to be paid for at one and one-half times the regular scale.

All employed women and children were placed under strict legal protection. No child could be employed anywhere in any way at an earlier age than fourteen years. From fourteen to eighteen years all employed persons must be provided with a certificate of age and of having passed the fourth standard examination in the public schools. And here was something else to make our eyes bulge. No woman of any age and no boy between fourteen and eighteen years of age could work overtime in their employment except on twenty-eight days in the year and then for not more than three hours in each of the twenty-eight days. In order to obtain even this overtime the employer must on each occasion file at the nearest office of the labor department an application and secure a permit. The application must state the name and age of each person of whom overtime work was desired and the amount of overtime expected. These names were ordered to be kept on file in the labor offices. Before the permit could be issued the records must be examined. If any person in the submitted list had within twelve months worked overtime on twenty-eight occasions the application for that person must be rejected. And for all the overtime work allowed the employer must pay a price and a half.

In our own happy land, where the freedom of contract is inviolable, we proceed in quite a different way. Imagine the salesgirls in a great department store restricted by law to three hours' daily overtime in the Christmas season, paid for that at one and a half times their regular wage, and provided with supper money or car fare to go home! But in the New Zealand stores you do not see those pale, thin, exhausted young women, struggling on with overtaxed frames and weary feet, that brighten for us the merry Yule-tide.

One morning when I was in the Pennsylvania anthracite region I arose early to see the men (and others) go into the mines. It was a great sight because there were about fifty boys whose employment was a crime against humanity and the State law and sowed the certain seeds of disease, ignorance, vice and misery for all society to reap. I saw one man trudging off to labor with his three children. One walked on each side grasping his father's hand, and the third, being too little to walk at the required pace, was astride the father's neck. The oldest of these boys was eleven and the youngest seven. I was told that the two elder boys drove mules in the mines. And the boy astride his father's neck? Oh, he picked slate.

You shall see no such sight as that in New Zealand, glory be.

The Breaking of the Land Monopoly.

"In music," said Schumann, "nothing is wrong that sounds right." The advance movement in New Zealand has been founded upon a similarly revolutionary doctrine. To the plain men that now controlled affairs nothing in legislation was bad if it furthered the welfare, health, liberty, happiness, or opportunities of the masses of the people. While they were radically changing conditions for the workingmen they were also busily knocking to pieces a land system that had all the bulwarks of old custom and all the sanctity of formula.

As in Australia, the land question really overtopped everything else. It was to these countries as the trust question is to us; on it depended whether the nation should go forward or backward. For years before the advent of the reformers, New Zealand, under the control of her land owners and bent upon a general and filial imitation of England, had made as much progress as imitators usually make. The finances were in a bad way, trade was torpid, the extraordinary resources of the islands were chiefly undeveloped. It was known then

as a "nice colony, New Zealand"; it was well-behaved, it had the proper reverence for antiquity, it could be depended upon to spread the dry-rot of feudalism among many ways, by a land system copied from England under which great estates seized and held most of the arable land in the colony, outside the crown possessions. It was the same old story; no settlers were coming because there was no land to attract them.

What was known as "the gridiron method" assisted materially in the building of these fine old estates. One member of a family would get hold of a strip of land while his son bought a parallel and similar strip a short distance off. Then they found means to squeeze out the intervening holder, if any, and amalgamated the properties in a way calculated to warm the heart of any land-grabbing American senator, in or out of jail. Where land was held by small settlers it was usually mortgaged. At one time farm mortgages were proportionately as common as they ever were in Kansas. On these heart-breaking debts a cruel interest was extorted. Banks were wont to get ten and sometimes twelve per cent., and the Shylocks and money-lenders did still better. As not even New Zealand farms could sustain such monstrous loads the country was steadily becoming poorer.

For these conditions the reformers applied two remedies that caused many of their friends to wince, the conservatives to protest, and landed families to cry aloud in agony.

First, the government passed an act under which it was authorized to use the public funds to pruchase estates and to throw them open to settlement. Wherever there appeared to be a piece of good land useful for the purpose, the government descended upon it and offered the owner a price. Invariably the offer was refused. Then the government appointed an arbitrator, the owner chose another, the two chose a third, and these fixed upon the value of the land. To this the government added five per cent., and the owner was obliged to accept the price thus determined, and to vacate the premises. Yes, like it or dislike it, out he went. And without appeals, stays, injunctions, arguments, briefs, surrebuttals, new trials, reopened cases, postponements, circuit court decisions, appellate court decisions, surpreme court decisions, or any other time-wasting. He pocketed the money and went from the land, or the government threw him off. Then the government cut the land into small farms and offered these to settlers on leases running 999 years and based upon four per cent. on the purchase price.

One of the builders of fine old estates and revered landed families was a gentleman that rejoiced in the pleasing name of Readymoney Robinson. He had a trifle of 120,000 acres, which he had formed into an estate called Cheviot, and planned to leave it as a seat of the landed gentry so dear to the English mind. In 1893 the population of Cheviot was twelve, all told; they being sheep-shearers, in fact. On a part of the land a few sheep ran; the rest was idle and would long be, for I suppose I need hardly say that the utility of these grand estates was either as a speculative holding or as sweet hunting preserves. The government offered Mr. Robinson a price for his land. Mr. Robinson declined it with scorn and indignation: naturally, for all the landowners looked upon the government's policy as an outrageous invasion of their rights, and upon the men that constituted the government as vile, atrocious anarchists. But the government, caring naught for these things, carried out the law upon Mr. Robinson, ousted him, cut up his fine old estate into small farms for the lower orders, and to-day 2,000 persons live upon it; and where in the good old days was nothing but a hunting field and a few sheep are now fields of grain.

High-handed and arbitrary all this was, no doubt, and subversive of the blessed precedents; but it saved New Zealand. It tore to shreds one of the

favorite postulates of the learned writers, for it recognized and paid for the unearned increment; the families that held lands for speculation got for their holdings the full market value and more. But it made New Zealand prosper, it turned the hunting fields into productive farms for men and women, and the plain men in charge of affairs said it was better to have production and opportunity and homes than to have all the economic postulates that ever were written.

They did more than this, for they have never rested with any achievement, nor thought it represented the ultimate state of man. They lifted the blight of the mortgages. How? In the most radical, direct, and unscientific way imaginable. The colony pledged its credit, issued obligations, borrowed upon them $7,500,000, and lent the sum at four per cent. to distressed farmers, taking security on the farmers' lands. This, too, was in total violation of the laws of political economy in such cases made and provided; but it cured the mortgage evil, which was probably more important. Relieved of the old deadly burden of extortionate interest, the small farmers of New Zealand began to prosper. They have prospered ever since. So far the Government has lent to farmers about $20,000,000, but it has saved them $40,000,000 in interest, because as soon as it came into the field with its cheap loans, interest rates dropped everywhere. You see Shylock has fled from these shores and will not return.

The government has never lost a cent in these loans.

Reform proceeded next, with a land tax graduated to an ascending scale, to discourage land grabbing and land speculation, so that the more land a man owns the higher is the tax-rate upon it. Thus for farms of ordinary size the rate is two cents in every $5 of assessed valuation: but on estates of more than $25,000 the rate increases in regular ratio to the maximum of six cents for every $5.

Except for absentee owners. They must pay fifty per cent. more than residents. You can see that in New Zealand the chance for fine old families and landed gentry is slim.

No doubt the theory of these things is extremely reprehensible, but the practise is excellent. What with seizing the big estates and what with the graduated land tax the size of holdings has been so reduced that of 115,713 landowners in 1905 only 22,778 came under the operations of the augmented land tax The others, having small properties, paid the smallest rate. Under the land purchase act the government has seized 691,594 acres, mostly hunting fields and uncultivated family inheritances. These have been partitioned into small farms and are occupied by actual settlers. Under the operation of all the new land laws together, the produce of New Zealand has trebled and the New Zealand farmer has become the most prosperous in the world.

There is another chapter in this story, which I add both because it has a certain grim touch of humor and because it contrasts so sharply with our own ways. We suffer so much from the performances of the tax dodger that certainly every State, and I suppose every community, could increase its revenue at least threefold if the taxes were honestly levied and paid. Once they had tax dodgers in New Zealand, but they have them no more. The reformers got rid of them by enacting a law that the government could buy any property at the value the owner placed upon it for taxation purposes. That is to say, if a gentleman declaimed that the assessors had done him infamous wrong, and that the estate they had valued at $100,000 was not worth more than $80,000, the government could draw a check for $80,000, and the gentleman was obliged to accept it. When this law had been sprung three or four times tax-dodging ceased to be an attractive amusement, gentlemen no longer complained of their assessments, and the revenues underwent a notable increase.

Do but imagine to yourself what would happen in Chicago, let us say, if the government had the right to purchase at the owners' valuation certain rich

railroad, brewery, and other corporation properties, that now bear one-tenth of their proper tax burdens. Think of it! Chicago would find herself with enough revenue to have a police force and keep her citizens from being sandbagged and murdered. And what a change that would be!

The End of Strikes in New Zealand.

Meantime John Ballance died in office, worn down by his labors (for the eight-hour restriction has never applied to cabinet ministers), and in his place arose to fulfil the utmost hopes of the new movement one of the strongest figures in the history of government in any age or country.

Richard John Seddon, this remarkable man, was of Lancashire birth and a career whose extremes had touched about all there is in life. He came into the world desperately poor, the child of the coal-mines, where first with pick and shovel he began to earn his bread. Subsequent experiences included digging for gold on the west coast of New Zealand, acting as miners' advocate (a kind of walking delegate), keeping a tavern, and campaigning for a seat in the lower branch of the colonial Parliament. He was a big man, with a big head, big strong hands, a big strong will, and a muscular frame. His schooling had been exceedingly meager; when he came to New Zealand he was hardly able to read; but he had tact, common sense, a singularly cool, clear mind, a taste for executive politics, and a sincere sympathy with the toiling army in whose ranks he had served. He educated himself; he was well aware of conditions as they are and not as they exist in books; but it appears that in this revolution he was more of a Garibaldi than a Mazzini, and at all times thinkers and originators sat behind him and mapped the way he won upon. He had come into the government with the Ballance ministry, and being the strongest member, succeeded naturally to the command.

He held it without interruption for thirteen years of achievements that seem most remarkable, carrying through daring innovations, upsetting formula and accepted theory, disproving the schoolmen, confounding his critics, and growing so much stronger at every election that in his last years he governed without opposition, all but fifteen of the seventy-five members of Parliament being pledged to his support. A plain man, with plain manners, great native shrewdness and skill, he kept his head in spite of his brilliant success. Tinsel honors of knighthood never tempted him; he remained plain Mr. Seddon when he might have been a baronet or peer or something of that kind; liked to be called "Dick," liked to chat with old cronies, addressed any one he knew well as "old man," wore a straggling grey beard, went about unpretentiously, and except for his big head and keen eyes looked essentially commonplace.

The greatest triumph of the new order, the law that rid New Zealand of strikes and brought labor and capital to mark time together, was the work of his administration. For strikes and riots this law substituted arbitration by tribunals maintained by the state. All labor disputes were by it referred to a Board of Conciliation, which was to take testimony and render a decision. If either side were dissatisfied with this an appeal could be made to an Arbitration Court, whose finding was to be final and binding.

The act was unique in two ways.

In the first place it distinctly recognized the labor-union as a necessary factor in modern life, legalized it, organized it, and dragged it up to perform a definite function in the government of the state. Each district (or county) in the colony was to have its Conciliation Board of five members, two chosen by the labor-unions of the district, two by the employers, and these four were to elect the fifth. The Arbitration Court, a colonial body, was to have three members, of whom one was chosen by the labor-unions, the second by the employers,

and the third was to be a judge of the Colonial Supreme Court, selected by the government. For the elective places on these boards only such labor-unions and employers' associations could vote as had registered with the Colonial Labor Office; but any seven men in any trade could at any time organize a union and secure registry.

Still more revolutionary was the other peculiarity. In away somewhat less than than half hearted we have established in various States, Boards of Mediation and Conciliation. None of these has been of the least utility except to afford employment for broken down politicians. The New Zealand law has been a real and not a nominal exhibition thing because the New Zealanders seized at once upon the heart of the whole matter.

They made arbitration compulsory.

Now, according to formula and the text books, arbitration cannot be compulsory; compulsory arbitration, we are told, is not arbitration at all, but a tyrannical interference with natural human rights. No doubt, good formalists; but here you can see it among a free and happy people in perfect working order, to the satisfaction of a community that is forgetting what the word strike means.

Under heavy penalties both sides to labor disputes are bound to abide by the decisions of the Arbitration Court. In practise the government found that seven in every ten cases were appealed from the Conciliation Board, whose decisions were not final; hence, after a few years the law was so amended as to allow a direct resort (under some restrictions) to the Arbitration Court, thus simplifying and hastening the procedure. The Conciliation Boards found enough employment in other activities.

Since under compulsory arbitration there can be neither strikes nor lockouts, the essential business of the Arbitration Court is really to fix in every line of industry a minimum wage. I know the text-books say that you must not do this, but all the text books seem to lose their effect when you come to New Zealand. There the minimum wage is fixed every week, and the only injury has been to persons that were wont to sell rotten eggs to be thrown at strike-breakers. Their business has been depressed; the rest of the community has fared exceedingly well.

See how the plan works in practise. Suppose the carpenters of Wellington think they should have higher wages. They make of their employers a demand for an increase, let us say, of a shilling a day. Suppose the employers refuse the demand. The carpenters' union now brings the matter before the Arbitration Court, which summons both sides for hearing. The carpenters through a representative (not an attorney) present their case; the employers make answer, through a similar channel, that the demand is unreasonable, unwarranted, and they cannot afford to grant it. Whereupon the employers are ordered to produce their books and show to the court (not to anybody else) whether their profits will or will not justify the increase. If the court thinks the conditions in the building trade do not warrant enhanced wages, it dismisses the petition and the matter is ended. If it thinks the employers, can afford to pay a shilling a day more, it makes an order to that effect, and for the next two years in the Wellington district the scale thus fixed by the court will be the minimum wages for carpenters.

Meantime there has not been a moment's interuption of work,—not a ripple has disturbed the industrial sea.

May I remind you for a moment of the different procedure in our own happy land? Here the demand would be presented by a committee or by a walking-delegate (either extremely obnoxious to employers soured by many many labor troubles), and instantly upon the refusal the men would throw down their tools and their work would stop all about the city. And not their

work alone. Thousands of other men, plasterers, masons, roofers, housesmiths, tinsmiths, plumbers, decorators and painters, would be unable to proceed with their work while they awaited the settlement of a quarrel in which they had no concern. Many innocent contractors would be embarrassed, many innocent tradesmen would lose heavily, many useful enterprises would be hindered, and the utmost borders of the community would feel the spreading circles of misfortune. Meantime there would be picket-lines, armed men, broken heads, and incipient riots; the police would attack the strikers and rioters would stone the police, and all the elements of civil war would surge about the street until the militia should come and camp on the scene and shoot three or four innocent bystanders.

That is the way we do it. The coal-miners' strike of 1902 caused a loss of $100,000,000. A strike of teamsters in Chicago caused losses estimated at $50-000,000. The Packing-House strike of 1904 threatened the nations food supply. The Colorado miners' strike produced civil war and such conditions as Americans blush to think of. But that is the way we do it. Shall not a man do as he pleases with his own? Shall he not conduct his own business as he shall see fit?

Not in New Zealand, if his conduct of his business disturbs the public quiet or impairs the Common Good. Because in New Zealand the Common Good is held to be as much more important than any man's business as it is more important than the frayed and weary apothegms of medieval economics.

SHORT REVIEW OF THE LABOR AND FREE EMPLOYMENT BUREAUS PROBLEM.

Adna F. Weber, Ph.D., Chief Statistician, New York Department of Labor, reviews the labor question during 1905, in a concise and interesting manner. Some extracts which may commend themselves to the workingmen of Ontario are herewith produced:—

In discussing the policy of labor protection, Governor Higgins, of New York, emphasizes the desirability of uniform legislation throughout the country, "in order that the industries of the State may be relieved from the unfair competition of those States which place no restriction upon the subject;" while Governor Roberts, of Connecticut, declares that "whatever safeguards the health of the employees of our industrial establishments, improves their efficiency and increases the prosperity of the State." The two views of the effect of labor legislation contrasted in the foregoing statements are not altogether irreconcilable. Labor laws enacted for the protection of wage-earners sometimes place temporary handicaps upon the employees thus affected; but if they tend to preserve the health and build up the self-respect of the working people otherwise subjected to intolerable toil and a slavish discipline, they make for a higher standard of workmanship and citizenship. Governor Douglas, of Massachusetts, affirms, "that it is because Massachusetts has been foremost of all States in the enactment of laws for the welfare of its workers that she is a leader among the manufacturing commonwealths, and anyone familiar with the exceptional skill and high *morale* of the workers will readily concede the large share of credit to be given to labor legislation in the maintenance of a prosperous industry in a section of the country that lacks natural advantages." In other sections of the country, where the policy has been one of social neglect, there has existed discontent, mistrust and suspicion in the ranks of employees, which on occasions have led to violent outbreaks against law and order. New England, on the other hand, has seldom had to concern itself with expensive industrial warfare, which not only harms industry itself, but in the long run costs citizens more than does the enforcement of adequate laws for the protec-

tion of wage-earners. In regulating injurious trades, Wisconsin enacted a law to prohibit the use of wood alcohol in a way to endanger the life or health of workmen. The law requiring blowers or exhaust fans to be provided on emery wheels, etc., in polishing departments of factories was amended so as to cover all polishing and buffing wheels throughout the factory, with the single exception of grindstones upon which water is used. Many States prohibit the employment of women in the operation of emery wheels or belts, which give off health-destroying particles of metal and dust.

Tennessee enacted the common statute requiring seats to be furnished to female clerks and saleswomen in mercantile establishments, while Connecticut, with its numerous brass and iron foundries, found it necessary to compel owners to furnish washrooms and closets for the use of the moulders.

The protection of trainmen from overhead obstructions has been a matter of concern to many legislatures, and most of the enactments of 1905 relate to this particular subject. Vermont required bridges and other overhead obstructions to be at least 22 feet above the rails; while Kansas and Wyoming regulated the stringing of wires over railway tracks. Wisconsin provided that railway companies shall place tell-tales or warning devices on all bridges and obstructions over their tracks that do not clear the tops of freight cars by at least seven feet. New York required railway companies to have locomotive boilers inspected as often as once every three months, and file certificates of inspection with the State Board of Railroad Commissioners. Maine required street car platforms to be vestibuled in winter, and New York added King's and Queen's counties to the other counties in which vestibules are required.

In this country, at present, workingmen's insurance against accidents is mainly confined to the railway service, although many wage-earners are, of course, members of the fraternal orders that provide insurance. The five principal railway brotherhoods, through their beneficiary departments, pay out nearly five million dollars a year in death and disability benefits to members, the insurance covering deaths from natural causes as well as from accident. Railway employees on a number of systems also contribute to insurance funds under company management; but they frequently object to these so-called "voluntary relief departments," on the ground that as a condition of membership therein, they are compelled to sign away their statutory right to recover damages for gross negligence. Many States have declared such waivers void; South Carolina, which had already outlawed such agreements as between railway companies and their employees has now made its statute to apply generally to all employees.

In speaking of the hours of labor, Mr. Weber says, the shorter hour movement, which expresses an intense aspiration for a fuller life on the part of the wage earners who bear so considerable a proportion of the burden of the world's work, appeals to the sympathy of thinking men, who are themselevs willing to work long hours at a stretch, provided they have opportunity to recuperate their mental faculties by means of an annual vacation. Such vacations, however, would not avail much to the manual worker, who must needs seek the preservation of health and vigor by shortening his daily hours of work. Workmen of a high grade of intelligence and foresight have often succeeded in securing shorter hours through the process of collective bargaining, as for example, the mechanics of the building trades have done. But the employer in the building industry faces local competition alone, and the building mechanics of a single locality can therefore proceed with their demand for a shorter working day without waiting to educate all the workmen of their craft throughout the country. Where competition is not thus confined within narrow limits, it requires years of education to induce even high-grade workmen to accept the

sacrifice needed to accumulate a defence fund sufficient to take care of fellow-craftsmen who may be left without employment when the time comes to enforce the demand for shorter hours. Thus the printers, who as long ago as 1902 resolved in their national convention that they would work eight hours instead of nine hours a day, spent several years in preparing for the change, and even now are contributing 10 per cent. of their wages for the maintenance of such of their members as have lost employment by reason of the eight-hour strikes late in 1905 or early in 1906. In occupations filled by workmen of less intelligence and foresight—and necessarily of smaller financial resources—such a movement is out of the question, and it is perfectly natural that they should look to the government to protect them from the blind tyranny of economic forces quite beyond their control.

In speaking of government employment bureaus he mentions fourteen States where public employment offices exist for bringing together workmen seeking employment and employers desiring help. In 1905, the Legislature of Michigan and Minnesota enacted legislation for the creation or maintenance of such offices. The Michigan Act directs the Commissioner of Labor to establish a free employment bureau in each city of 50,000, thereby confirming and amplifying the work he had previously done under his general powers. Minnesota, which had previously authorized certain counties to maintain free employment offices, now appropriates $1,750 for the establishment of a state bureau in one of the large cities (Minneapolis). The recent statistics of the offices are as follows:

States having Free Employment Offices.	Applications for help.	Applications for situations.	Positions filled.	Percentages of positions filled to applications for situations.	Per capita cost of each position filled.
Connecticut	10,116	11,730	8,694	74.12	$1.03
Illinois	44,577	45,323	39,598	87.37	.80¾
Kansas	722	5,706	5,712	100.11	.....
Maryland	263	451	122	27.05	.....
*a*Michigan	.....	.....	.....	.....	.....
Minnesota	.....	.....	4,994	.....	.24
Missouri	14,204	13,948	8,400	60.22	.....
Montana (Butte)	11,653	13,555	10,274	75.79	.17½
Nebraska	.....	.....	.....	.....	.....
New York	4,072	6,032	4,384	72.68	1.18
Ohio	30,508	24,132	21,203	87.86	.85
Washington (Seattle)	.....	.....	20,558	.....	.0636
West Virginia	2,008	2,239	1,711	76.42	.....
Wisconsin	16,462	15,602	15,587	99.90	.34
Totals	134,585	138,718	*b*115,685	83.40	.....

*a*Offices created by laws of 1905. *b*Not including Minnesota or Washington.

CONVICT LABOR.

The question of prison labor has been agitating the minds of representative Governments throughout the world for many years, in the endeavor to adopt some means of employment, the product of which will come in least competition with free labor, and at the same time keep the prisoners rationally employed, still remains an unsolved problem. Of course, there are systems in vogue in the various convict institutions in the United States, but they are all more or less injurious to free labor, in the estimation of those immediately interested, viz., the wage-earners.

In the report on convict labor, laid before the Senate and House of Representatives at Washington last June, six different systems of employment were mentioned. The lease system is one under which the State enters into a contract with a lessee, who agrees to receive the convict, to feed,

clothe, house and guard him, to keep him at work and to pay a specific amount for his labor. Although the State holds the right to make rules for the care of the convict, no institution is maintained by the State other than a place of detention where prisoners are held until placed in the hands of the lessee, and in which to confine those who are unable to work. Under the contract system the State feeds, clothes, houses and guards the convict. To do this an institution is maintained and a force of guards and other employes. A contractor engages with the State for the labor of the convicts, which is performed in or near the institution. The contractor pays the State a stipulated amount per capita for the services of the convict, supplies his own raw material and superintends the work. The piece-price system differs from the contract system only as to superintending the work and determining the speed at which convicts must work. The State maintains the institution and feeds, clothes and guards the convicts. The contractor supplies the raw material and pays the State an agreed amount for the work done on each piece or article manufactured by the convicts. The supervision of the work is generally performed by a prison official, although sometimes by the contractor. The officials of the prison not only maintain discipline, but dictate the quantity of work required. In the public account system the State enters the field of manufacturing on its own account. It buys the raw material, manufactures and puts the product on the market, and assumes all the risk of conducting a manufacturing business. The State has the sole control of the convicts, and with them conducts an ordinary factory. Under the State-use system a business of manufacture or production is obtained, but the use or sale of the goods produced is limited to the same institution, or to other State institutions. The system signifies that the State shall produce for its own consumption only. The public works and ways system is very nearly like the State-use system. It might not improperly be included therewith. Under this system the labor is not applied to the manufacture of the common marketable articles of merchandise, but to the construction and repair of prison or other public buildings, public roads, parks, breakwaters, etc. The lease system is not so much in vogue as in past years, and where it does still exist the welfare of the prisoners is more carefully guarded than has been. The contract system is far superior to the lease system. The State sells to the contractor only the labor, and retains to itself the general care of the convict. Practically all the work done under the public works and ways system is performed in the open air, which is greatly to the benefit of the health of the convicts engaged. But when the convicts are engaged, however, in building public roads there is greater danger of escape and consequently a greater cost for guarding them. Another objection to the employment of convicts on public ways is the fact that they are exposed to the gaze of the public, which all phrenologists admit to be against the best interests not only of the public but of the convict as well.

In Canada the contract system has been in the past most prevalent, and is at the present time adopted to some extent in prisons where skilled labor is employed. All systems of employment for convicts can be overdone. Soliciting work from the public, and "rushing contracts" have been indulged in. In our sister Province to the east of us, the public has been even canvassed for printing. (Royal Commission Report, Quebec evidence, pp. 429, 450.) In the recent past jail deliveries have repeatedly taken place to the Central Prison for the purpose of keeping up the promised number of convicts to carry out contracts entered into. If there is less injury accruing from a lesser variety of articles manufactured in prisons, then Ontario has the advantage over the Provincial reformatories to the east of us and the State prisons to the south. Would it not be an improvement to eliminate

all machinery from the prisons and not have the prisoner make part of an article, as at present, but allow him to make the whole article by hand, and thereby learn some kind of a trade that he might follow for an honest living when he gained his liberty?

At the twenty-sixth annual convention of the American Federation, held at Minneapolis, Minn., on November 12th, 1906, President Gompers speaks of the convict labor question in his report as follows:—

"It may be necessary to repeat here briefly what has often been stated in regard to Labor's position upon the subject of convict labor. We recognize the economic wisdom and the humane purpose in finding employment for those confined in our penal institutions, but we protest against the labor of society's derelicts and unfortunates being made a source of profit for the state or its contractors to the detriment of the inmates, of the state and of the people generally.

"We particularly protest against that policy being pursued by any one or more states for their own profit or the profit of their contractors by dumping the products of convict labor upon the markets of the states in which the people have either partially or wholly solved that problem for themselves.

"If states which now inconsiderately and inhumanly encourage crime for their own profit or for the profit of contractors were compelled to sell the product of their convicts within their own states, they would soon be confronted with the condition that would compel a better system to protect their own people from that evil.

"Incidentally, it may be noted that there has always been, and is now, proportionately to population, a larger number of men convicted of crime in those states which pursue the contract system of labor as compared to other states, where the convict labor system is fairer to the people and more humane to the convicts. And it is additionally interesting to know that where a particular industry is carried on in a penal institution, a very much larger number of men are arrested, charged with, and convicted of, crime of that particular industry. In other words, the system not alone makes convicts of men who would otherwise and under other conditions continue to be law-abiding, but the tendency is also to make common misdemeanors, criminal offenses, in which long and unjust sentences are imposed, in order to furnish 'convicts' to perform the particular labor in the prisons.

"We should not alone direct our attention to have the states abolish the old and brutal condition of convict contract labor, but also to press to its enactment the bill before Congress by which the states may protect themselves from the unwisdom, the selfishness, and the brutal disregard in this respect of other states."

LABOR TROUBLES IN THE UNITED STATES.

Mr. Frank Morrison, Secretary of the American Federation of Labor, in his twenty-sixth report, presented at the annual convention of that body, held at Minneapolis, Minn., November 12th, 1906, gives the latest data on the subject of lockouts and strikes for 1905. The figures will, no doubt, interest the wage-earners of Ontario, as showing the movements, changes of wages, hours of labor, benefits distributed, etc., by the international trades and labor unions of the United States and Canada. The following tabulations are from the report:—

Charters.—Reports from the Secretaries of 112 of our 119 International Organizations furnish us with the information that there has been issued during the past year 2,328 charters; 1,913 charters surrendered—1,422 of the charters surrendered were locals of International Unions and 491 affiliated direct with the American Federation of Labor. Of the latter number 331 were suspended for non-payment of per capita tax; 21 were ordered to join newly formed International Organizations, 138 disbanded and one charter revoked.

Strikes.—Full and complete reports have been received from 112 International Organizations and from a number of local unions which show that there were 887 strikes, in which there were 91,530 involved. Of that number 63,812 were benefited and 11,183 not benefited. The total cost of strikes reported on was $3,982,865.66.

Organizations.	Charters issued.	Charters surrendered.	Gain in membership.	No. of strikes.	Strikes won.	Strikes compromised.	Strikes pending.	Strikes lost.	Reduction in hours per day.	Gain in wages.	No. involved.	No. benefited.	No. worsted.	Donations to other unions.	Cost of strikes.
A. F. of L.	317	491	.....	28	10	11	2	5	.....	.....	1,071	.....	.....	.....	$14,732 00
Actors	3	2	.....	2	2	....	....	....	.....	33⅓%	500	.....	.....	$3,500 00	200 00
Asbestos Workers	6	3	264	5	2	3	....	....	1	50c ₱ day	210	.....	.....	.....	.....
Bakers and Confectioners	9	38	.....	28	14	4	....	10	.....	.....	1,012	900	312	2,857 00	29,287 50
Barbers	24	22	416	....	....	....	....	....	.....	.....	.....	.....	.....	.....	.....
Bill Posters	4	3	10	1	....	....	....	....	.....	.....	12	.....	12	.....	1,000 00
Blacksmiths	7	6	.....	16	12	....	4	....	.....	.....	276	260	.....	.....	.....
Boiler Makers and Iron Ship Builders	71	56	109	31	10	8	....	2	½	15c ₱ hr	1,062	1,426	52	.....	28,443 65
Bookbinders	10	2	.....	12	2	....	10	....	.....	.....	.....	.....	.....	.....	8,935 00
Boot and Shoe Workers	9	9	.....	11	7	1	....	2	.....	.....	696	420	36	15,000 00	5,695 14
Brewery Workers	*l* 9	*m* 2	2,000	6	2	2	....	2	.....	.....	480	.....	.....	5,635 00	75,800 86
Brick, Tile and Terra Cotta Workers	22	39	1,545	6	6	....	....	....	1	20%	2,398	2,398	.....	.....	7,844 00
Bridge and Structural Iron Workers	7	2	.....	1	....	....	1	....	.....	.....	3,000	.....	.....	.....	25,000 00
*Broommakers	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brushmakers	1	2	56	2	1	....	1	....	1	20 to 65 %	123	47	.....	.....	300 00
Carpenters, Brotherhood	213	176	22,934	....	....	....	....	....	.....	.....	.....	.....	.....	6,000 00	77,795 00
Carpenters, Amalgamated	8	3	1,900	2	....	....	2	....	.....	.....	.....	.....	.....	.....	2,000 00
Carriage and Wagon Workers	11	8	.....	5	4	....	....	....	1	10%	1,450	1,340	.....	.....	.....
Carvers, Wood	.....	1	100	4	2	....	....	2	2	*g, h*	136	68	68	.....	4,281 83
Car Workers	33	27	1,500	5	3	1	....	1	.....	.....	2,500	2,400	100	.....	900 00
Cement Workers	20	20	2,000	1	1	....	....	....	.....	.....	3,000	3,000	.....	.....	.....
Chainmakers	.....	2	.....	1	....	....	1	....	.....	4 to 5%	225	.....	.....	.....	9,000 00
Cigarmakers	12	10	.....	100	52	6	32	7	.....	.....	10,180	10,123	57	.....	9,820 83
Clerks	85	150	.....	....	....	....	....	....	.....	.....	.....	.....	.....	5,003 00	.....
Cloth Hat and Cap Makers	.....	4	.....	21	7	1	....	13	.....	.....	637	323	314	.....	11,335 00
Commercial Telegraphers	.....	.....	2,000	....	....	....	....	....	.....	.....	.....	.....	.....	.....	.....
Compressed Air Workers	1	1	50	....	....	....	....	....	.....	50 c ₱ day	.....	.....	.....	350 00	.....
Coopers	12	16	229	27	9	7	....	11	.....	10%	750	200	500	.....	7,000 00
Curtain Operatives, Lace	.....	.....	6	2	1	1	....	....	.....	.....	443	338	.....	.....	11,677 90
Cutting Die and Cutter Makers	1	.....	11	1	1	....	....	....	.....	.....	100	100	.....	.....	.....

Electrical Workers	50	4	6,000	25	18	7					10,000	10,000				120,000 00
Elevator Constructors	1									5 % *a*						
Engineers, Steam	14	29		8	5		3									980 18
Engravers, Watch Case		3								8 %					102 00	
Firemen	19	11		9	8	1			4	10 to 15 %	3,250	3,250				7,526 00
Fitters and Helpers, Steam	12	2	1,200													
Flour and Cereal Mill Employees	7	2	250	2	1					15 %	35	15			300 00	400 00
Foundry Employees	5	9		1	1				½	5c ₱ day	430	382	48		185 00	3,750 00
Freight Handlers	10	1	1,100												400 00	
Fur Workers	2	1													50 00	
Garment Workers, United	20	24	590	12	2	1		10			10,000	3,000	7,000			30 000 00
Garment Workers, Ladies'	9	11							5 ₱ wk *q*							
Glass Bottle Blowers	8	2	500												875 00	
Glass House Employees	1	2														
Glass Snappers		8														1,000 00
Glass Workers, Amalgamated	10	9		1		1					486					
Glass Workers, Window			300							10%					2,000 00	
Glove Workers	3	3								5%					60 00	
Gold Beaters	2		194												325 00	
Granite Cutters	13	3	500	14	12						2,100				3,425 00	3,867 91
Grinders, Pocket Knife Blade	3		90	4	2				1	5 to 15%	60	40				1,337 66
Hatters				1	1						150	150			5,000 00	12,000 00
Hod Carriers	60	1	991	5	4	1			1	5 to 7½%	800	800			2,000 00	1,500 00
Horse Shoers	12	4	100	6	6					25-50 ₱ d	250	250				4,500 00
Hotel and Restaurant Employees	75	32	1,694	5	4		1		2	5%	575	1,500			1,352 24	2,600 00
Iron and Steel Workers				17	4		13								386 40	25,535 25
Jewelry Workers	2	2	75												640 00	
Lathers	54	7	800	26	20	6					2,500				165 00	400 00
Laundry Workers	20	10	1,037	10	6	1	1	2		10% *e*	2,181	1,649	800			9,327 00
Leather Workers on Horse Goods	7	11		15	5	1	2	7	1 *b*	2%	784	117	382		845 00	22,056 00
*Leather Workers, Amalgamated																
Lithographers			55	2							2,279					127,144 89
*Longshoremen																
Mach. Printers and Color Mixers															1,000 00	
Machinists	50	19		30	20	3		4			3,000	2,500				143,069 58
Maintenance of Way Employees	40	18		1		1					2,000	2,000				
Marble Workers	4		16	1		1					100	100			1,500 00	200 00
Meat Cutters and Butcher Workmen	17	*u*		3	2						800	400	400			1,120 00
Metal Polishers	23	12	839	23	9	5		9			600	400	100		1,000 00	6,295 00
Metal Workers, Sheet	49	15	500	14	6		8			10%	1,000	700	300			16,450 00
Mine Workers, United	187	164														920,895 15
Moulders, Iron	19	8		69	13		53	3			4,000	2,500				452,031 59
Musicians	36	34	2,500													
Painters	179	106	5,416	100	90	5		5							57,700 00	

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Paper Box, Bag and Novelty Workers	4	2	450	4	2	1	....	1	1	25c day *j*	900	400	.....	.....	450 00
Paper Makers	6	22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500 00	.....
Pattern Makers	3	.....	400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,353 15	3,483 74
Pavers and Rammermen	6	3	700	1	....	1	....	....	.....	.....	20	60	.....	.....	.....
Paving Cutters	15	4	570	7	6	....	....	....	.....	.....	470	.....	.....	.....	1,929 98
Photo Engravers	1	.....	68	12	2	....	10	....	.....	.....	142	.....	.....	84 00	6,217 75
Piano and Organ Workers	14	7	.....	1	....	....	....	....	.....	.....	50	.....	.....	4,000 00	7,000 00
Pilots	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plate Printers, Steel and Copper	1	....	25	....	....	....	....	....	.....	.....	.....	.....	.....	.....	.....
Plumbers	59	36	1,135	44	39	3	....	2	.....	.....	1,524	.....	.....	.....	56,979 00
Potters, Operative	5	3	206	2	....	....	2	....	.....	10%	.....	.....	.....	522 00	3,872 05
Powder and High Exp. Workers	7	2	92	1	....	....	1	....	.....	10%	68	.....	.....	.....	300 00
Print Cutters	1	.....	12	....	....	....	....	....	.....	.....	.....	.....	.....	124 50	.....
Printing Pressmen	28	9	282	3	1	1	....	1	.....	15%	770	640	130	.....	10,128 00
Quarry Workers	10	2	1,000	14	14	....	....	....	1	10 to 25 %	1,200	1,200	.....	225 00	3,500 00
*Railroad Telegraphers	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Railway Employees, Street	30	5	.....	5	2	1	....	2	.....	.....	522	.....	.....	.....	2,908 00
Seamen	2	.....	.....	1	....	....	....	....	.....	.....	3,000	.....	.....	.....	.....
Shipwrights	13	13	.....	9	4	1	....	2	1	30c p day	578	361	122	440 00	.....
*Slate and Tile Roofers	3	3	7	6	5	....	....	1	.....	.....	.....	.....	.....	.....	.....
Slate Workers	9	2	2,100	1	1	....	....	....	.....	.....	1,000	6,000	.....	200 00	12,000 00
Spinners, Cotton Mule	.....	.....	.....	4	3	1	....	....	.....	5%	150	150	.....	5,000 00	300 00
Stage Employees, Theatrical	8	.....	500	12	8	....	4	....	.....	25%	860	500	.....	15,000 00	45,678 95
Steel Plate Transferers	2	.....	3	....	....	....	....	....	.....	.....	.....	.....	.....	25 00	.....
Stereotypers and Electrotypers	11	.....	118	....	....	....	....	....	.....	.....	.....	.....	.....	.....	.....
Stove Mounters	5	4	45	2	....	....	....	....	.....	.....	25	.....	.....	.....	670 00
Switchmen	12	5	866	3	....	....	....	3	.....	.....	200	.....	200	.....	.....
Tailors	23	12	800	16	13	1	....	2	.....	*e, f*	800	735	65	.....	9,676 50
*Teamsters	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Textile Workers	49	18	1,000	....	....	....	....	....	....	10%	.....	.....	.....	.....	.....
Tile Layers	.....	1	247	3	....	1	....	2	.....	.....	100	50	50	.....	.....
Tin Plate Workers	.....	.....	.....	.....	.....	.....	.....	.....	.....	10% *k*	.....	.....	.....	.....	.....

Tip Printers	.....	.....	.....	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	75 00	.....	
Tobacco Workers	.....	.....	120	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500 00	.....	
Travelling Goods and Leather Novelty Workers	5	4	.....	5	1	....	3	1	.....	.....	600	120	135	55 00	1,880 00	
Typographical Union	43	91	2,119	*o*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,563,729 10	
Upholsterers	7	.....	.....	9	6	.....	.....	.....	1 & 2	10 to 20%	600	500	.....	.....	5,235 00	
Weavers, Elastic Goring	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....	52 00	1,982 67	
Weavers, Wire	.....	.....	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97 14	.....	
Woodsmen and Saw Mill Workers	9	.....	415	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
*Wood Workers	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Totals	2,328	1,913	73,473	887	494	89	155	112	.....	.....	91,530	63,812	11,183	147,208 43	3,982,865 66	

a, for 1000 members; *b*, in 3 cities; cities; *c*, for one branch of the trade; *d*, 10 cities; *e*, 6 % for 735 members; *f*, 5 % for 5,000 members; *g*, 50c per day in New York City; *h*, 2.00 per week in Boston; *i*, 17½ % for 200 members, 12 % for 200 members; 10% for 1,500 members; *j*, result of one strike; *k*, recovered what they lost two years ago; *l*, and 22 branches; *m*, and 3 branches; *n*, revoked, 19; *o*, see report under head of "International Unions"; *p*, for 1,154 men; *q*, for 250; *, no report.

Benefits paid to Members by International Organization during the past year.

Organizations.	Death benefits.	Death benefits members' wives.	Sick benefits.	Travelling benefits.	Total insurance.	Unemployed benefits.
Actors	$500 00		$600 00			
Bakers and Confectioners	700 00	$150 00	3,576 54			
Barbers	14,020 00		38,726 15			
Bookbinders	3,500 00					
Boot and Shoes Workers	13,400 00		78,509 55			
Bridge and Structural Iron Workers	10,800 00					
Carpenters, Brotherhood	202,284 57	25,550 00	80,000 00			
Carvers, Wood	2,450 00				488 72	
Car Workers	200 00		405 00			
Chainmakers	200 00			800 00		
Cigarmakers	162,818 82		165,917 80	55,293 93		35,168 50
Clerks	5,719 00					
Compressed Air Workers	1,000 00		1,150 00	200 00		
Curtain Operatives, Lace	1,400 00	300 00				
Cutting Die and Cutter Makers	25 00					
Electrical Workers	8,100 00					
Engravers, Watch Case				80 00		
Flour and Cereal Mill Employees				300 00		250 00
Foundry Employees	750 00		2,315 00			
Freight Handlers	10,000 00				25 00	500 00
Fur Workers	100 00			67 00		27 00
Glass Bottle Blowers	47,885 20					
Glass House Employees				100 00		
Glass Snappers			200 00	500 00		
Glass Workers, Amalgamated	845 10					
Glass Workers, Window	30,000 00					40,000 00
Granite Cutters	23,480 45					
Grinders, Table Knife	200 00					
Hatters	26,000 00					
Hotel and Restaurant Employees	19,000 00		17,432 00			
Iron, Steel and Tin Workers	4,900 00					
Jewelry Workers	900 00		1,848 00			
Lathers	3,700 00					
Leather Workers on Horse Goods	2,030 00		12,105 00			
Lithographers	15,832 75					
Machinists	29,375 00					
Maintenance of Way Employees	10,000 00					
Meat Cutters and Butcher Workmen	2,950 00					
Metal Polishers	5,389 75					
Metal Workers, Sheet	10,500 00					
Moulders, Iron	62,748 65		173,134 50			3,625 20
Painters	54,447 50	11,500 00				
Pattern Makers			6,136 76		5,257 37	
Paving Cutters	900 00		500 00			
Photo-Engravers	1,050 00					
Piano and Organ Workers	3,400 00		5,963 31			
Plumbers	6,500 00		29,475 00			
Print Cutters	599 00		376 00			12 00
Printers, Machine Textile	450 00					
Printing Pressmen	11,000 00					
Quarry Workers	850 00					

Benefits paid to Members of International Organizations during the past year.

Organizations.	Death benefits.	Death benefits members' wives.	Sick benefits.	Travelling benefits.	Tool insurance.	Unemployed benefits.
Railway Employees, Street	13,100 00	.....	23,000 00	.....	.....	.....
Sawsmiths	300 00	.....	.....	.....	.....	.....
Slate and Tile Roofers	1,900 00	.....	.....	.....	.....	.....
Slate Workers	800 00	200 00	.....	.....	.....	.....
Spinners, Cotton Mule	600 00	200 00	.....	.....	.....	.....
Stage Employees, Theatrical	17,500 00	.....	13,000 00	.....	.....	.....
Stereotypers and Electrotypers	1,920 00	.....	.....	.....	.....	.....
Stove Mounters	2,000 00	.....	.....	.....	.....	.....
Switchmen	138,375 00	.....	.....	.....	.....	.....
Tailors	12,740 00	.....	.....	.....	.....	.....
Tobacco Workers	1,500 00	.....	8,118 00	.....	.....	.....
Travellers' Goods and Leather Novelty Workers	.....	.....	150 00	.....	.....	.....
Typographical Union	35,840 00	.....	.....	.....	.....	.....
Weavers, Goring	200 00	.....	.....	.....	.....	.....
Weavers, Wire	299 00	.....	798 00	.....	.....	.....
Totals	$994,974 79	$37,900 00	$663,436 61	$57,340 93	$5,771 09	$79,582 07

INCREASES IN WAGES.

The December number of the Massachusettes' Labor Bulletin contains an interesting article on the recent increases in wages in the United States, and the most pleasing feature about it is, that it is not confined to one section of the country or to a few industries solely, which causes the wage-earner to think there may be something permanent in this welcome state of sudden prosperity. The most pronounced increases have been in wages paid to steam and electric railway employees and to textile operatives.

In February, 1906, the Boston and Maine Railroad increased the wages of 3,000 employees, adding $140,000 to its annual pay roll, and it was reported that an increase would be granted to other employees in the near future, the policy of the company being not to grant a general increase to all employees at the same time, but to increase the wages in different branches of the service at different intervals. Shortly after the Boston and Maine increase was made, the New York, New Haven and Hartford Railway Company voluntarily advanced the wages of 6,825 men, making an annual increase in its pay roll of $200,000. Practically all branches were benefited by this advance. The Boston and Albany Railroad more recently made certain advances in the wages of about 200 men distributed in nearly every branch of the service. These advances will involve an addition to the annual pay roll of $14,600.

Early in November, the Pennsylvania Railroad Company and the Philadelphia and Reading Railway Company granted substantial increases to their employees. The Pennsylvania Railroad Company ordered an advance of 10 per cent. in the wages of all permanent employees on the lines east of Pittsburg and Erie receiving less than $200 a month, the increase to take effect December 1st, 1906. About 125,000 men were benefited, which means an increase of $8,435,424 a year in wages paid by the company. Similar advances are promised employees on the lines west of Pittsburg. The increase in the western lines will effect more than 60,000 employees and will add an expense of between $3,500,000 and $4,000,000 to the pay rolls. The increases now ordered and in contemplation, therefore, will favor 185,000 employees of the Pennsylvania Railroad Company and will involve an increased outlay of about $12,000,000 for wages. The increase granted to the employees of the Philadelphia and Reading Railway Company will benefit about 25,000 persons.

Shortly after these announcements, the Chicago and Northwestern Railway Company voluntarily granted an increase to more than 1,100 agents and to approximately 500 operatives, the total increase in the annual wage budget amounting to about $120,000. The Norfolk and Western Railway granted an increase of 10 per cent. in wages of all employees now receiving less than $200 a month, the advance to take effect December 1, 1906. The Delaware, Lackawanna and Western Railroad Company then announced that it would grant a ten-hour day to all trainmen in its employ, a concession which had already been granted to engineers and switchmen, and further stated that an increase in wages on the ten-hour basis was under consideration.

On November 24, 3,000 firemen on the New York Central lines were granted an increase in wages varying from six to seven per cent., and on the same day the United States Steel Corporation announced that an increase of ten cents a day would be paid to about 50,000 laborers in its branch plants in the Pittsburg steel district. The increase will affect all the men employed at the numerous plants of the Carnegie Company, the American Sheet Steel Company, and the American Steel and Wire Company.

There have been numerous instances of increases in wages granted to street railway employees in various sections of the country. During the past summer, in the settlement of disputes with the Amalgamated Association of Street and Electric Railway Employees, several large traction companies in Chicago and vicinity granted increases aggregating $500,000 annually to about 10,000 employees. In November, the Boston Elevated Railway Company voluntarily increased the wages of 5,300 men employed on the elevated and surface lines. The increase varies from 10 to 25 cents a day, and the annual increase in the pay roll will amount to about $160,000. The Montreal (Canada) Street Railway recently decided to increase the wages of conductors and motormen one cent an hour, which will mean an annual increase of $70,000 in the wages paid by the company.

Following the plan adopted by the railroads of the country, two of the largest express companies, the American and the National, each announced an increase of 10 per cent. to all employees whose wages did not exceed $200 a month and had not been increased within twelve months. About 10,000 employees of the American Express Company were affected, and between $600,000 and $700,000 was added to the annual pay roll.

The increase in wages paid to textile operatives has been general throughout New England. In Maine, during the past summer, the mills of Biddeford, Lewiston, and Waterville, together employing nearly 10,000 operatives, announced an increase amounting to five per cent. In July, the cotton mills of Manchester, N.H., posted notices announcing an increase of five per cent. in wages for 15,000 operatives, amounting to an annual increase of more than $250,000. In Massachusetts, corresponding increases during the summer months were granted, in many instances voluntarily. In November, as a result of the determined stand taken by cotton operatives of Fall River, the managers of 93 mills, employing about 30,000 operatives, granted a general increase of 10 per cent., to go into effect November 26, for a period of six months. It is expected that advances of from 5 to 10 per cent. in other mills of Eastern Massachusetts, Rhode Island, and Eastern Connecticut will soon follow.

The numerous and substantial increases in wages of employees in the various industries of this country have, in many instances, been granted voluntarily, no doubt in recogniton of the unusual prosperity enjoyed by the respective organizations concerned. In other cases the justice of the demands of employees for a share in the general prosperity of the country and of individual concerns has been recognized. Then, also, the scarcity of labor has been unprecedented. In Bradstreet's of October 27, we read that "Cotton picking has been hampered, the output of cotton manufactures has been restricted, the production of iron and steel has been cut down, while copper as well as ore mining operations have been reduced somewhat by the one common cause, paucity of labor." A report from Chicago says that the railroads of the West are calling for 50,000 laborers for construction work, and that such work is being retarded by the inability of the roads to secure sufficient common labor.

In connection with the rise in wages, the general prosperity of the country and the scarcity of labor, which are correlated phenomena, the accompanying rise in prices must also be taken into consideration. A report of the United States Bureau of Labor for 1905 shows that the retail prices of meat, flour, vegetables, and other articles of food have materially increased over prices recorded in 1904. In view of this advance in prices of food, for which the wage-earner spends a large proportion of his income, the wage advances being accorded him are not only justifiable, but necessary, if he is to maintain his present standard of living.

The natural inquiry arising from a careful consideration of the above facts would be, "What follows higher wages?" In *Moody's Magazine* for November, 1906, appears a paragraph under that caption, from which the following remarks are taken:—

"With the cost of living at the highest point for 25 years and rising rapidly, it is only fair that labor should receive a share of the present unprecedented prosperity. Nor is it probable that labor's demands for increased pay will, in most cases, be refused if they are reasonable and are presented in a proper way. It is, however, history that periods of rising wages soon run into periods of strikes and lockouts. It is human nature to want more of all good things. This applies to the profits of greedy employers as well as to the wages of dissatisfied workingmen. Hence a compromise is not always possible when labor asks for more than employers are willing to grant. Judging the future by the past, labor will soon begin to demand more than employers will grant, and then trouble will begin which will not end until industry has been retarded and prosperity is ended. . . . It is not improbable that a new adjustment must soon be made. It is almost certain that during this process great friction will result; great economic and political disturbances will take place."

Whatever may be the result of the upward movement of prices and wages, together with the attendant insufficiency in the supply of labor of all kinds, it is undoubtedly true that the crest of the wave of prosperity has not yet been reached and that the full report of the advances in wages has yet to be written.

IMPROVEMENT OF LABOR CONDITIONS IN GERMANY.

Up to 1904 the General Federation of German Trade Unions published statistics of strikes and lockouts, but not of those movements of the workers for improving their conditions of labor which did *not* lead to a stoppage of work. In order to show this side of trade union activity the General Federation decided to compile statistics of *all* movements for increasing wages and shortening the hours of work, so that the achievements of organized labor may be fully appreciated.

During the year 1905 the number of offensive strikes was 1,366, affecting 336,583 male and 14,426 female wage earners, the number of defensive strikes was 837, affecting 28,151 males and 2,136 females, while the number of lockouts was 401 which affected 133,009 male and 18,501 female persons. In addition 2,763 movements for shortening the hours of labor and increasing the wages were recorded which terminated without resorting to strikes, while in 205 cases the employees had to resist reductions of pay or extensions of the working time.

The following table gives an account of the improvements affected by the trade unions in 1905, either in consequence of strikes or without strikes:—

Groups of Trades.	Number of persons obtaining increases in wages.		No. of persons obtaining reductions of the hours of labor.	
	In consequence of strikes.	Without resorting to strikes.	In consequence of strikes.	Without resorting to strikes.
Building trades	67,481	136,441	27,265	23,635
Metal trades	10,002	30,396	6,008	21,648
Printing trades	638	3,653	623	3,677
Woodworking	15,564	18,292	14,554	11,613
Food preparation	1,569	14,450	190	4,166
Clothing, textile and kindred trades	7,699	21,464	9,900	23,817
Other trades	9,653	54,910	3,126	16,572

Arbitration and conciliation as methods of settling industrial disputes grow very slowly in popular favor. Doubtless that arises from the difficulty experienced in many industries in finding an equitable basis, satisfactory to employers and employed as a standard for the rise and fall of wages. In the course of the past decade special Governmental institutions have been created in most civilized countries for the special purpose to settle disputes arising out of the relations between labor and capital. In Germany the law requires so-called "Industrial Courts" to be formed in all towns of over 20,000 inhabitants; and elsewhere they may be formed at the option of the Government or on the requisition of a sufficient number of employers or workmen. In any given town the members of the Industrial Court are elected in equal numbers by employers and employees voting in separate bodies. The courts discharge several functions: They act primarily as Courts of Summary Jurisdiction for the settlement of individual claims arising out of the labor contract, where the amount in dispute does not exceed $25; they also act as committees of reference, in which capacity they prepare "opinions" upon any technical questions which may be referred to them by the authorities; and finally they act as formal boards of conciliation and arbitration in collective disputes, *i.e.*, in cases of actual or impending strike or lockout. When acting in the last-named capacity the Industrial Court must consist of a president and four or more representatives of the employers and of the workmen in equal numbers; such representatives need not be members of the Court, and they must not be in any way concerned in the dispute at issue. The Court may be set in motion on the application of either side to a dispute, or it may act on its own initiative. Where but one side applies the Court endeavors to persuade the other to join in the application. In the event of conciliation being effected the agreement is signed by the "board" and by representatives of the parties, and is published. In the event of failure, the "board" embodies its conclusions as to the terms upon which it considers the parties ought to agree in the form of a "decision," and calls upon the disputants to declare their acceptance or rejection within a certain time; and in any case the decision is published. There are 411 Industrial Courts in Germany at the end of 1905. The following figures give information as to the work of the Industrial Courts acting as Boards of Conciliation and Arbitration in the years 1902 and 1903:

	1902.	1903.
Number of appeals for conciliation	144	174
Agreements arranged	35	54
Decisions made and accepted by both parties	4	7
Decisions made and declined by one or both parties	15	15
Unsuccessful efforts at conciliation without any decision rendered	40	36

Only in a small proportion of all industrial disputes the parties apply to the Courts; a far greater number of labor conflicts is settled by negotiations between voluntary associations of employers and wage-earners.

RECENT LEGAL DECISIONS AFFECTING LABOR IN ONTARIO.

From Labor Gazette, February, 1906.

Strike as Protest against Employment of Non-Union Men held not to be Conspiracy.

Bowman, the complainant, a non-union man, went to work at Burrow, Stewart and Milne's foundry, Hamilton, Ont., on the 9th of December, 1905. Three days later the union workmen struck as a protest against his employment, and did not return to work until Bowman was discharged. There was an arrangement made between the firm and the union that no non-union men were to be employed. In rendering judgment on the charge of combining and conspiring against a non-union man, Magistrate Jelfs said, "I am satisfied in my mind that the evidence does not disclose a breach of any law, and, therefore, these defendants have no right to go to the higher court." The defendants were consequently discharged.

(R. vs. Dalton and Others, 28th Dec., 1905, Police Court, Hamilton, Ont.)

In connection with the above case the following decision of the Appellate Division of the Supreme Court of New York., is of interest:

By Section 171 of the Penal Code of the State of New York, it is forbidden for an employer and an employee to make a contract which prevents the latter joining a labor union. By the decision in question this section is held to be unconstitutional.

Harry Marcus, the employer in this case, was convicted of forcing an employee into making an agreement with him not to become a member of any labor organization, as a condition of securing employment. The Appellate Division reversed a previous judgment and ordered the release of Marcus. Justice McLaughlin, in rendering judgment among other things said:—

"It has frequently been declared in the Courts of this State that it is competent for the members of a labor union to refuse to work with non-union men, and to strike in case their demands are not exceeded to.

"It does not follow, however, that it is competent for the legislature to force individuals against their will to become members of labor organizations as a condition of obtaining employment, or to compel employers under penalty of fine and imprisonment to employ non-union men only."

In making a contract whereby the employer stipulated that during the life of the contract the employee should be a non-union man, he (the employer) was within his legal rights.

(Appellate Division of the Supreme Court of New York).

Intimidation of Musicians.

Adolph Thoburn, the complainant, Secretary-Treasurer of the Russell Theatre, Ottawa, laid a charge of intimidation against James McGillicuddy, President of the Ottawa Local Branch of the International Musicians' Union, for intimidating visiting musicians belonging to the American Federation of Musicians, in order to prevent them playing with the members of the Local Organization, who belong to another union. McGillicuddy's practice was to report

visiting musicians to the executive of their union, and by so doing have them fined. It was held by Magistrate O'Keefe, on the 6th of January, 1905, that McGillicuddy had no right to do this. The case was dropped upon the Magistrate's decision.

(R. vs. McGillicuddy, 6th January, 1906, Ottawa Police Court.)

Damages Awarded Against Street Railway Company in Favor of Civic Fireman.

In the case of Charles O. Ardagh, a fireman in the Toronto Fire Brigade, against the Toronto Railway Company, the trial judge gave to the plaintiff $1,200 as compensation for injuries suffered by him through an accident, in which a fire reel on its way to a fire was run into by a street car. It was found by the jury that the car was proceeding at an excessive rate of speed. On appeal by the Company to the Divisional Court the judgment of the Lower Court and the finding of the jury were sustained.

Compensation for Injuries Cases.

In the case of Connell vs. The Ontario Lantern and Lamp Company, the defendants moved to set aside a previous verdict or to be allowed a new trial, urging that there was no evidence of negligence for the jury to try the case on, and that if there was such evidence the jury had misappreciated the same.

The jury had awarded the plaintiff $1,000 as compensation for injuries suffered by him while at work upon a punching machine which cut off three of his fingers. The motion was dismissed and the judgment for $1,000 allowed to stand.

(Connell vs. Ontario Lantern and Lamp Co., 19th January, 1906, Divisional Court, Ontario.)

Because the negligence of the victim himself was the cause of the accident, an action taken against the Pere Marquette Railway Company by one Young was dismissed at London, Ontario, on the 17th January, 1906.

(Young vs. Pere Marquette, Winter Assizes, London, 17th January, 1906.)

William Chivas, while working about an insecure wall, was injured by its collapse. He sued his employer for damages and recovered $700, his eye having been badly injured.

(Chivas vs. Oliver, Winter Assizes, London, 13th January, 1906.)

The trial of the case of Mrs. Fallis against the Grand Trunk Railway Company, arising out of an accident at Eastwood, in September, 1904, resulted as follows: The jury found that there had been negligence on the part of the railway employees in violating the rules of the Company, but that the deceased could have averted the accident, and that the plaintiff was entitled to damages for the sum of $2,700.

Owing to the fact that the jury had found that the deceased could have averted the accident, the judge dismissed the case.

(High Court of Justice, 8th January, 1906, Britton, J.)

Charles Brazier was a workman in the employ of the Canada Brass Company, whose duty it was to operate a rip-saw. This, he alleged, was not equipped with a divider or any other device for the protection of the operator. He lost an eye through a knot of wood flying out and striking him, and his other eye was also affected by the accident. The defendants urged that dividers were in the way of the workmen and hindered the operations of the saw. Judgment was rendered in plaintiff's favor for the amount of $1,500.

(Middlesex Winter Assizes, 9th January, 1906.)

FROM LABOR GAZETTE, MARCH.

Alien Labour Case.

Robert Menzie, President of the Menzie Wall Paper Company of Toronto, was convicted in the Police Court, Toronto, of a breach of the Alien Labor Act, and fined $50 and costs. Defendant was charged with bringing one Harry Cruisemire, from Philadelphia, to work in his factory at Toronto.

Cruisemire, a wall paper printer, stated that he saw an advertisement in a wall paper journal in Philadelphia last September, and communicated with Mr. Menzie. The latter wrote him stating that he could not employ him in the United States, but could give Cruisemire a situation if he came to Toronto, Cruisemire said he also asked Menzie to advance transportation to Toronto, but Menzie told him he could not comply with his request as he would be committing a breach of the Alien Labor Act. Later on Cruisemire again wrote Menzie and told him that if he advanced him his fare as far Niagara Falls it would be all right. Mr. Menzie sent Cruisemire the ticket and the latter paid his own fare from the Falls to Toronto. The contract of hiring was not made until Cruisemire was in Canada. Cruisemire is no longer in the employ of the defendant. It is said an appeal will be taken from the conviction.

(Rex v. Menzie, 19th February, 1906, Toronto, Denison, P.M.)

A resident of Sarnia, who is erecting a new residence in that town, gave a contract for decorating the interior of the residence to a contractor of Port Huron, Michigan. As soon as the Port Huron workmen started at the work the Sarnia Trades and Labor Council held a meeting and instructed its solicitor to take action to enforce the Alien Labor Law. On the owner being notified by the solicitor he cancelled the contract with the Port Huron man and gave it to a Sarnia decorator. This obviated the necessity for legal proceedings.

Reduction of Damages under Workmen's Compensation Act.

In an action for damages for injuries sustained through the alleged negligence of defendants whilst in their service, the jury found in favor of plaintiff with $2,500 damages. Defendants had delegated to their foreman the superintending of the construction of the frame for a hoist, and the negligence of the foreman was the cause of the accident. The material for the construction of the work was of the proper kind, and sufficient in quantity, and the foreman was a competent man to place in charge. It was held, however, that plaintiff would have been without redress but for the Workmen's Compensation for Injuries Act, as there was no evidence of any personal negligence of the directors or officers of defendant corporation, and anything that may have been improper in the system that the foreman adopted for the construction of the frame cannot be regarded as the negligence of the corporation, so that there would be no liability at common law. The verdict was reduced to the sum of $1,500, the limit allowed by section 7 of the Act.

(Linden vs. Trussed Concrete Steel Co., 12th February, 1906, Mabee, J.)

Release of Right of Action.

In an action brought against a company the alleged widow of a man who met his death while in the service of the company, owing to the alleged negligence of the company, the latter set up as a defence to the action a release given by

the widow on payment of $250. The widow replied that the release was obtained by fraud and misrepresentation.

The jury found that the release was procured from the widow under circumstances that rendered it invalid as a bar to her claim.

It was argued by the company in the Court of Appeal that because the widow, while repudiating the release, had not restored or offered to restore the money paid as the consideration for her executing it, she was not in a position to attack the transaction.

The Court held that the widow had not before action elected to affirm or disaffirm the transaction, and the bringing of the action was a declaration of intention to disaffirm. The release having been found invalid, the widow should not be deprived of the benefit of that finding; but, being relieved, she should be required to return or otherwise make good the money paid to her, and she was permitted to bring it into court.

(Doyle v. Diamond Flint Glass Co., 29th June, 1905, Court of Appeal.)

What is a Railway, and what is a Frog?

An interesting question arose in an action for damages under the Workmen' Compensation for Injuries Act, brought by a boy of 14 for injuries received by him while in the employment of a firm of railway contractors, by reason of his foot having been caught in the angle of certain rails, which, it was alleged, constituted a railway frog within the meaning of section 5, sub-section 2 of the Act. The frog was not filled with packing, which was the negligence defendants complained of.

Defendants had a sub-contract for grading a portion of a railway in course of construction, and plaintiff was one of a gang of men employed on the work. This gang was engaged in removing earth and rock from a cutting by means of dump cars, which were hauled by horses along rails laid down for the purpose, consisting of a single track with rails of 33 lbs. to the yard laid about 3 feet apart. The rails were laid on ties also about 3 feet apart, and connected after a certain distance with two diverging tracks, connection being made by means of a switch rail with either track as occasion required.

The court held that the track constituted a "railway," and the angle of the rails a "frog" within the meaning of the Act.

(Amendola v. Dobeny, 6th January, 1906, Falconbridge, J.)

Defect in Machines.

A divisional clerk upheld a verdict for plaintiff in an action for damages under the Workmen's Compensation Act for injuries sustained while working a die press or cutter, due to the imperfect working of a lever used in starting and stopping the machine.

This lever had a horizontal play of 3 or 4 inches, and when at a point midway between the extremes called "neutral" the machine was at rest. To start the machine the lever was pushed by the operator beyond "neutral," and to stop it was pulled towards the operator, and if then simply released the lever should have moved back to "neutral" and stayed there. The machine was stopped by the operator and the lever released, when, instead of stopping at "neutral" it went past that point whereby the machine was set in motion and the operator had his hand badly injured. It appeared that this was a "trick the machine had."

(McCarty v. Kilgour, January 8, 1906, Divisional Court.)

FROM LABOR GAZETTE, APRIL.

Decisions Under Alien Labor Act.

An employer of labor was convicted of an offence against the Act by the importation of one Louis Curtis, and fined $50.

(Rex. v. Elliott, 15th March, 1906, Toronto, Denison, P.M.)

The secretary of the Employers' Association at Toronto was acquitted during March, on a long pending charge of a violation of the Alien Labour Act, in that he went to New York and there employed one Perry, a United States citizen, to work for the Rolph Clark Lithographing Co., at the time of a strike during August, 1905.

Defendant was acquitted on the ground that Perry had told him at the time of his engagement that he was a native born Canadian. Perry later told the manager of the Lithographing Co. that he was a Canadian citizen.

The labor organization at whose instance the charge was preferred, took exception on the ground that defendant refrained from asking further questions of Perry to ascertain his exact status.

(Rex v. Merrick; 26th March, 1906, Toronto, Denison, P.M.)

FROM LABOR GAZETTE, MAY.

Participation in Benevolent Fund.

The plaintiff, a member of the Toronto police force, on the 19th January, 1899, while vaulting a wooden horse at the gymnasium, this being part of a manual exercise prescribed by an inspector of the police force, injured his right foot, and brought an action for a declaration that he was entitled to a pension from the defendants, and for payment of arrears thereof, alleging that the injury received resulted in his being permanently incapacitated from further service in the force.

The plaintiff was for nearly 15 years a member of the Toronto police force, and during that period a percentage was deducted from his pay as provided by the rules and regulations of the Benevolent Fund maintained by the force, the fund constituted being to provide allowances and pensions for the sick and disabled members of the force.

By section 32 of the rules and regulations of the Benefit Fund, it is provided that "When in the execution of duty such injuries have been received, as in the opinion of the Police Commissioners permanently incapacitate a member from further service on the police force," the member should be entitled to a certain pension computed at a certain rate

The court held that the injury was one sustained by the policeman in the execution of his duty, but that whether or not his permanent incapacity was the result of the injury was a matter for the consideration of the Police Commissioners.

(Gummerson v. Toronto Police Benevolent Fund, 21st December, 1905, Divisional Court.)

Damages for Wrongful Dismissal.

Plaintiff brought an action against defendants to recover damages for wrongful dismissal from his employment as chief engineer on the steamer "City of Collingwood," alleging an engagement for the year 1905, and at the trial was awarded damages amounting to $550.69.

(Robertson vs. Northern Navigation Co., 24th March, 1906, Anglin, J.)

Damages for Loss of Eye.

At the Hamilton Assizes recently a jury awarded plaintiff $2,000 damages for the loss of an eye while engaged in the service of the defendants.

(Allen v. Sawyer, Massey Co., 15th March, 1906.)

Suit for Damages Settled.

In an action brought by the administrators of a deceased street railway conductor against the defendants for damages for negligence in killing the deceased in a collision at a crossing in February last, between the cars of the street railway and the steam railway, the defendants agreed to a judgment for $6,000 and costs.

(London & W. Trust Co., v. G.T.R. Co., 17th April, 1906, London Assizes, Boyd, C.)

Defect in Machinery.

At the second trial of an action brought by the widow of a locomotive fireman, against his employers, a railway company, for damages for causing the death of her husband, who was scalded to death by the drawing out of an arch flue in one of the Atlantic type passenger engines on which he was employed, a jury has awarded plaintiff a verdict of $9,000. At the first trial plaintiff was non-suited on the ground that no negligence on the part of the railway company had been shown.

A divisional court subsequently affirmed by the Court of Appeal, set aside the non-suit and directed a new trial on the ground that it was for the jury to draw inferences from the evidence given as to whether defendants were guilty of actionable negligence.

(Schwoob vs. Michigan Railway, 28th March, 1906, St. Thomas Assizes.

Damages under Workmen's Compensation Act.

The plaintiffs, employees in defendants' rolling mill, were injured by the explosion of a boiler. The explosion was caused by the water being allowed to get too low in the boiler, owing to the valve regulating the supply having been closed. It was the duty of a fellow employee, called a "water tender," who was killed by the explosion, to attend to this valve and see that a proper and sufficient supply of water was maintained. The boiler was built by experienced and reputable builders of boilers. The evidence showed that a brass petcock at the bottom of, or connected with, the glass indicator had become broken, and its place imperfectly supplied with a wooden plug.

It was held by the Court of Appeal, on appeal from the verdict and judgment at the trial, that on the facts disclosed there was no liability at common law. It was further held that the failure to repair the petcock was negligence from which defendants were liable under the Workmen's Compensation Act, it being a fair and reasonable inference from the evidence that if in order the accident might have been averted, and the defect being known to defendants' officials for several weeks before the accident, plaintiffs' damages were limited to the amounts recoverable under the Act.

(Woods & Durnford vs. Toronto Bolt Co., 13th November, 1905, Court of Appeal.)

Superintendence Under The Workmen's Compensation Act.

The plaintiff, a lad of 18, was employed in the service of defendants, a firm of boiler makers, and whilst engaged with two men, also in defendants' service, in riveting the plates of a boiler, was severely injured.

The riveting was being done by means of a hydraulic hammer, and in the course of the operation the plaintiff was directed by the man in charge to go inside the boiler to keep a loose stay, which hung from the crown of the boiler, from interfering with the work.

Whilst the boy was inside the boiler, and owing to insufficient means provided for the proper performing of the duty put upon him, the boiler tilted, and as a result crushed his leg against the bulling post inside the boiler and broke it.

At the trial the jury found that the man who ordered the plaintiff to go inside the boiler was negligent in that knowing the danger to which plaintiff would be subjected by obeying the order given him he took no steps to prevent the accident.

A Divisional Court in affirming the verdict and judgment at the trial held that the man using the hammer was in effect necessarily entrusted with the superintendence of the whole operation, that to his orders plaintiff was bound to conform, and that the accident having happened owing to this man's negligence, plaintiff was entitled to damages.

(Shea v. Inglis, 26th December, 1905, Divisional Court.)

FROM LABOR GAZETTE, JULY.

Damages Based on Alleged Faulty Plans of Architect.

The Court of Appeal for Ontario has affirmed a judgment of the trial judge, and of the Divisional Court on appeal therefrom, in a case which is of much interest to labor circles. The facts may be briefly stated as follows: The defendants being desirous of building a mill of desired character in the same vicinity, the plans used by him, which had been prepared by architects of high standing, and then proceeded to build in general accordance with these plans, employing an experienced builder.

After the walls and roof had been completed, the machinery was brought into the building through large door openings left unclosed for that purpose. During a violent storm, however, the wind rushed in through the openings, forced off the roof, and the walls fell, the plaintiff's husband, a boilermaker, being killed.

There was contradictory expert evidence as to the mode of construction and as to the doing of mason work in winter.

The Court held that leaving the openings for the introduction of the machinery was not, under the circumstances, a negligent act, and also that there was no liability by reason of the mode of construction, even if it was defective, the owner being entitled to rely on the skill of competent architects and builders.

(Valiquette vs. Fraser, 16th June, 1906, Court of Appeal.)

Injuries Caused by Collapse of Structure Erected by Workman.

The Court of Appeal has affirmed a judgment of a Divisional Court, by which a verdict and judgment at the trial in favor of plaintiff were set aside and a non-suit entered.

The action was brought by a boilermaker in the employ of the defendants, who, while engaged at the boiler-house of the Toronto Railway Company in doing some work for his employers, assisted in erecting a scaffold, through which

some six weeks later he fell, receiving serious injuries for which the jury assessed damages at $1,500. The Court held that inasmuch as plaintiff knew or should have known that the lumber, with which he himself had constructed the scaffold, was defective, through which defect the accident happened, he was, in a sense, the author of his own wrong and could not recover.

(Kellier vs. John Inglis Co., 29th June, 1906, Court of Appeal.)

FROM LABOR GAZETTE, AUGUST.

Fined for Intimidation.

A member of the Teamsters' Union, Toronto, was found guilty in the local police court of intimidating teamsters in the employ of Henry B. Gee. On a previous occasion Gee swore that defendant had threatened some of his teamsters because they were not union men. Defendant was fined $50 or three months in jail. The magistrate characterized defendant's conduct as tyranny of the worst kind.

(Rex vs. Wilson, 11th July, 1906, Kingsford P.M.)

Claim for Fifteen Years' Wages.

A case was tried at the Spring Sittings at the High Court at Sandwich, Ont., in which the right to recover some fifteen years' wages was involved.

The action was brought by William Chalk and his wife Delia Chalk against John D. Wigle, the husband claiming some $3,400 and the wife $1,296, the latter sum representing seven years' wages was involved.

It appeared that Chalk, who came to this country from England, was at the age of five years taken by defendant, a farmer, into his home and was raised by him. When he took plaintiff he only agreed to keep him until he was 21, but at the arrival of that period defendant and his wife were so attached to plaintiff, William Chalk, that they kept him and his wife, whom he had married and brought to the house, for some years thereafter. Subsequently, owing to a quarrel, the plaintiffs left defendant's house and brought this action. It was also claimed by plaintiff, William Chalk, that defendant had promised to give him 75 acres of land as a recompense for his services.

The defendant contended that Chalk was the same as a member of his family, that he had provided for him at all times, and that the young man had no just claim for compensation. The trial judge held that there was abundant evidence of conversations between Chalk and defendant in which the subject of wages was mentioned by Chalk and not repudiated by defendant in terms, and that a contract to pay wages was proved. It was also held that there was abundant evidence of offers by defendant to give Chalk 75 acres of land, and that defendant ought now to make that tender good. The value of the 75 acres being $1,600, there should be deducted therefrom $600 for clothes and money furnished by defendant and $1,000 was considered a fair sum to allow William Chalk for his work, after giving credit for $600. Judgment was entered for plaintiff, William Chalk, for $1,000 and costs; the claim of the wife was dismissed without costs.

(Chalk vs. Wigle, 10th July, 1906, Falconbridge, C.J.K.B.)

Interesting to Farm Laborers.

In view of the fact that farm laborers frequently make contracts of hiring to cover winter and summer months, and then, after serving the winter months, when there is little work and the farmers have given larger pay than the season

would warrant to retain the services of the hands for the harvest, desert their employment, attracted by the lure of higher wages elsewhere, the following case will be of interest.

An English laborer, named Alfred Towell, sought employment from J. B. Phillips, of Prince Edward County. The hiring was for one year, the laborer to have an advance of $5 per month for spending wages, and the balance to be paid at the end of the term. On the 15th June, the employee, after endeavouring to get his master to discharge him by carelessness and disobedience of orders and using unbecoming language to his master to recover the balance of wages. At the trial it was clearly established by evidence that the employee had no cause for leaving, and also that he had used improper language, and the case was dismissed.

(Towell vs. Phillips, June, 1906, Flint, P.M., Belleville, Ont.)

FROM LABOR GAZETTE, SEPTEMBER.

Offence Against the Lord's Day Act.

In the Police Court at Toronto two Hebrews, Joseph A. Steiner and Abraham Brahm, were found guilty of a breach of the Lord's Day Act, cutting meat in a butcher's shop on Sunday. The defendant Brahm claimed to be a ragpicker, and in defence set up that the butchering business was not his regular calling, and that he was merely helping the other defendant, who was ill. On behalf of Steiner, it was contended that the work was one of necessity, and was, consequently, excepted from the operation of the Act, and, further, that there was no Lord's Day Act in force in Ontario, the Provincial Act having been repealed by the Dominion Aet, which does not come into force until 1st March, 1907. The magistrate held that the Provincial Act was still in force and rejected the other defences, fining Steiner $1 and costs or thirty days, and remanding Brahm for sentence until called on.

(Rex vs. Steiner and Brahm, 23rd August, 1906, Denison, P.M.)

Desertion of Service on Government Cruiser.

At Windsor, on the complaint of Captain Dunn, of the fishery cruiser Vigilant, James Tomlinson was sentenced to two week's imprisonment for desertion of his employment on the cruiser. A conviction was insisted on as a deterrent to other possible offenders.

(Rex vs, Tomlinson, 5th September, 1906, Bartlett, P.M.)

Damages for Loss of Eye.

In the case to which a reference was made in the May, 1906, number of the Gazette, a Divisional Court has affirmed the verdict at the trial.

The plaintiff was a mechanic in the employ of defendants in the city of Hamilton. In November, 1905, while engaged at his usual occupation, he was hit in the left eye by a piece of steel from a cylinder which was being chipped by a fellow-workman a short distance away, and the eye was permanently destroyed.

The plaintiff alleged negligence on the part of defendants in not providing screens. Defendants denied negligence, pleaded carelessness of plaintiff, and contended that the injury was an unavoidable accident. Plaintiff recovered a verdict of $2,000, which defendants claimed was excessive. The court held that there was sufficient evidence of negligence to warrant the case being submitted

to the jury. The evidence established that the employment was dangerous, and it was the duty of defendants to use all reasonable precautions for the protection of their servants.

(Allan vs. Sawyer-Massey Co., 24th July, 1906, Divisional Court.)

Damages Due to Unguarded Machinery.

The Court of Appeal for Ontario has dismissed an appeal from the judgment of a Divisional Court, affirming the judgment at the trial, whereby the plaintiff was awarded damages to the amount of $1,200, in an action of negligence. Plaintiff, a man under the age of 21 years, was employed by defendants in their foundry in the town of Waterloo, and was on the 18th January, 1904, engaged upon work on boiler plates, when, as he alleged, he was thrown on the machinery, and owing to its being unguarded his left arm was caught therein and badly crushed and injured. The trial judge held that the machinery was dangerous and should have been guarded, pursuant to the Ontario Factories Act This was affirmed by a Divisional Court.

(McBain v. Waterloo Mfg. Co., 1st October, 1906, Court of Appeal.)

FROM LABOR GAZETTE, OCTOBER.

Bar-Tender Fined for Breach of Liquor License Act.

Under the new License Act a bar-tender has been fined, at the same time as the proprietor of the hotel, for selling liquor during prohibited hours. Under the new law every bar-tender must be licensed, and by way of punishment for a breach of the Act, in addition to fine, the license of the bar-tender may be cancelled. In the case in question a fine of $5 was imposed on the bar-tender, with a warning that a repetition of the offence would entail a cancellation of his license.

(Rex v. Whelan et al, 12th September, 1906, Police Court.)

Farm Labourer's Wages Cases.

A Sheffield Township farmer was recently ordered to pay $40 wages and costs to a farm labourer in his employ. The complainant stated that he had hired for seven months from March, at $10 a month, and had worked industriously from sunrise to sunset daily, except Sunday; that he could not get enough to eat without complaints on the part of his employer, and that his master threatened to hire another man and pay him out of complainant's wages, because he could not shock sheaves of grain as fast as the binder dropped them in the field. Complainant had been discharged by his master. The Magistrate found in favour of the complainant as above.

(Anon; Aylesworth, P. M., Tamworth.)

FROM LABOR GAZETTE, NOVEMBER.

Damages for Loss of Fingers.

At the Middlesex Assizes, held in the month of September, a jury awarded plaintiff $500 damages for the loss of several fingers which were cut off while plaintiff was working at a press which was alleged to be out of repair.

(Steinburg vs. McCleary Manufacturing Co.)

Liability of Master for Injuries Caused by Servant Departing from Course of Employment.

A case was recently decided involving the question of the liability of an employer for damages caused by an employee, who is engaged upon an enterprise not in the course of his employment. The action was brought to recover damages for injuries sustained by plaintiff owing to the alleged negligence of the driver of an ice-wagon in the employment of the defendants, resulting in a collision with a motor-bicycle upon which plaintiff was riding on a public street in the City of Toronto. The ice-wagon was driven by one Leslie, and the accident occurred between eight and nine o'clock at night. The driver's duties consisted in his starting from defendants' barns about eight o'clock in the morning with a load of ice for distribution to defendants' customers on a fixed route in the western part of the city, and after completion of such delivery, which in due course would take until four or five o'clock in the afternoon, in his returning to the barns. On the day of the accident all the ice had apparently been delivered in due course, but there was no trace of the driver's movements from the time of the completion of the delivery until a short time before the happening of the accident.

About eight o'clock p.m. he was seen driving his wagon at a galloping gait in a direction quite opposite to his employers' premises, and by his recklessness and negligence he ran into plaintiff, who was struck by the shaft of the vehicle. The driver was drunk and quarrelsome at the time, and next day could give defendants no account of what happened. He was discharged. The defence relied upon, was that the defendants were not responsible for the act of the driver, as he had ceased to be acting in the course of his employment at the time of the accident. The court held that plaintiff could not succeed, as from the time that the driver, having disposed of his load of ice, delayed returning to defendants' stables, and drove about to enjoy himself, he had in effect discharged himself. He was then at large on a drunken bout, and himself alone liable for his wrong-doing, inasmuch as any departure of the servant for his own purposes from the discharge of his ordinary duties will relieve the master from responsibility.

(Willis vs. Belle Ewart Ice Co., 1st October, 1906, Boyd, C.)

Damages Awarded to Family of Railway Yardmaster.

An action was brought under the Fatal Accidents Act by the administrators of the estate of Joseph Navin, deceased, for the benefit of his widow and children, against the defendants, to recover damages for his death, which was caused, as alleged, by their negligence.

Deceased, who was yardmaster of the Grand Trunk Railway Company in the London yards, in the ordinary course of his duty was passing behind the most westerly of four cars standing by themselves on a side line. As he was crossing the track, two cars of the defendants, propelled by a flying shunt, came from the east and ran into the standing cars, with the result that he was knocked down, run over, and killed by the car behind which he was passing. There was no evidence that cars were liable to be shunted negligently or unexpectedly, and he did not see or hear the cars, and no warning was given to him. The Court of Appeal, reversing the judgment at the trial, which dismissed the action, held that there was evidence of negligence on the part of the defendants

to go to the jury, and the fact that the deceased did not look for approaching cars before going behind the standing car was not sufficient to show that he was guilty of such negligence as *ipso facto* to deprive him of the right to recover. Judgment was ordered to be entered for the plaintiff for the amount of damages assessed by the jury.

(London and Western Trusts Co. v. Lake Erie and Detroit River Railway Co., 28th March 1906 Court of Appeal.)

Claim for Damages for the Death of a Fisherman.

An action was brought by the administrator of George Sturgeon, deceased, for damages in respect to the death of the latter, alleged to have been caused by the negligence of the defendants, who were an incorporated company carrying on a general fishing business in Ontorio. Plaintiff alleged that the deceased was a fisherman employed on a steam fishing tug of the defendants called "The Star," then engaged in fishing on Lake Erie; that the vessel having been sent out by the defendants' manager on a very rough day to lift the defendants' nets, was struck by a sea about four miles off Port Burwell pier, and deceased washed overboard and drowned, and that if the tug had been furnished with life-saving and other apparatus, as required by the Steamboat Inspection Act and regulations issued thereunder, the deceased would not have been drowned. The want of such equipment was the negligence complained of. A Divisional Court held, affirming the judgment at the trial, that the Act, except as to life-buoys and life-preservers, did not apply to the defendants' fishing tug, and that if the rules and regulations, purporting to have been passed thereunder, were intended to carry the provisions beyond the terms of the statute, they were without authority, but that it was preferable to read them as not intended to apply to steamboats excepted from the operation of Section 3 of the Act, and that, therefore, the plaintiff could not recover in an action, brought under Lord Campbell's Act, against the defendant in respect to a death alleged to have been caused by the negligence of the defendant company in failing to comply with the provisions of the Act and regulations as to life-saving apparatus other than life-buoys and life-preservers.

(Sturgeon v. Port Burwell Fish Co., 12th June, 1906, Divisional Court.)

In connection with the case Rex vs. Menzies under the Alien Labor Act, a cheque for $25, being one-half of the fine imposed, was forwarded from the Department of Finance, Canada, to the Department of Labor on October 15, and was transmitted by the latter department to the solicitors for the informant, Toronto, on October 16.

Defective Machinery.

A settlement of an action of an infant suing by next friend against defendants for damages sustained by him while in their employ, has been sanctioned by the court on behalf of the infant. Plaintiff was an oiler in defendants' employment, and while engaged in the performance of his duties was, on March 22, 1906, struck on the head by a large bobbin filled with binder twine that broke loose from its fastenings while revolving at a high rate of speed, by reason of which plaintiff has since been incapacitated from continuing his former or any laborious employment. Judgment was granted, pursuant to terms of settlement, for plaintiff for $700, which includes $175 for doctor's fees, $85 for costs, and $15.50 for hospital fees.

(Jewitt vs. Canadian Cordage Co., 19th October, 1906, Mabee, J.)

Action for Damages Dismissed on Ground of Deceased's Own Negligence.

An action was brought under the Fatal Accidents Acts by the widow and administratrix of one John Hammill, a yardsman in the employ of one of the defendants, a railway company. Hammill was killed by being crushed between a car and a stone wall erected by the other defendants, the corporation of the city of Hamilton. The city corporation have a city yard into which a switch from the railway runs, passing a coal shed on the curve. On the opposite, and concave side of the track the city corporation erected a stone wall eight days before the accident. Plaintiff alleged that this wall was negligently built, and that it was placed so close to the track that it was a trap for brakemen or others who had to place cars in the city yard. On July 4th, 1905, the deceased had been ordered by the yardmaster of the railway to place a car in the yard, and in so doing he was caught between the side of the car and the wall, the space being only about ten inches, and received injuries from which he died a few days later. On an appeal by the city corporation from the verdict and judgment for plaintiff at the trial, a Divisional Court held that assuming the city corporation, having knowledge of the usual practice of yardsmen in placing cars, and in so doing of occupying the land where the wall stands for the purpose of signalling the engine driver, negligently placed the wall where it is so as to endanger the yardsmen when placing cars, yet the deceased might have taken another method of signalling; he chose to place himself in a position of danger with a knowledge of the facts, where injury was inevitable and was the cause of his own injury; he stepped in the way of danger needlessly and thoughtlessly, and that was the immediate cause of the injuries he received. In the result the action was dismissed with costs.

(Hammil vs. G.T.R. Co., City of Hamilton, October 19, 1906, Divisional Court.)

Bar-tender Fined for Not Having License.

One Robert Henry, a bar-tender in the employ of the proprietor of a hotel, has been fined under the new license law, which requires all bar-tenders to be licensed. The proprietor of the hotel was also fined for permitting the bar-tender to sell drinks over the bar without a license. In each case a fine of $10 was imposed.

(Rex vs. Hassell & Henry, 8th October, 1906, Beeman, P.M.)

Damages Awarded to Widow of Workman.

At the Brantford Fall Assizes a jury awarded Mrs. Samuel Muma $3,500 damages for the death of her husband last July, while working on a C.P.R. pile-driving train. Muma was killed in a collision between two working trains near Galt.

(Muma vs. C.P.R. Co., October 23rd, 1906).

Appeal for Verdict Dismissed.

An appeal from the verdict and judgment at the trial in favor of plaintiff for $150 in an action brought under the Workmen's Compensation Act has been dismissed by a Divisional Court. Plaintiff was engaged as a workman in defendant's factory at Belleville operating a Bliss drawing press for making vessels out of metal, and lost his hand, by reason, as he alleged, of a defect in the machine. The jury found that the tripping part of the machine was defective

Defendants contended that there should have been a non-suit, and that if there was any evidence to go to the jury, it was not sufficient to warrant the jury in finding as they did.

(Simmons vs. Chown, September 20, 1906, Divisional Court.)

Damages Due to Collapse of Roof.

Judgment was given at the Ottawa Assizes in favor of plaintiff, awarding him $880 damages for injuries sustained owing to the collapse of the Ottawa fat stock building in March last. Plaintiff was an employee of the defendants, who had the contract for the steel work. He was on the roof of the structure when it collapsed, and received serious injuries.

(Finn vs. Locomotive & Machine Co., of Montreal, Ltd., September 24, 1906.)

FROM LABOR GAZETTE, DECEMBER.

Privy Council Case.

Right of Railway Companies to Contract Themselves out of Liability for Injuries Sustained by Employees.

Reference was made in the March number of the Labour Gazette to an appeal being taken by the Grand Trunk Railway Company of Canada to the Privy Council from the decision of the Supreme Courtof Canada, holding that the Statute, Chapter 31 of the Statutes of 1904, passed by the Dominion Parliament, was within the competence of such Parliament. The Statute in question provides as follows:—

Notwithstanding anything in any Act heretofore passed by Parliament, no railway company within the jurisdiction or legislative power or control of Parliament shall be relieved from liability for damages for personal injury to any workman, employee or servant of such company, nor shall any action or suit by such workman, employee or servant, or, in the event of his death, by his personal representatives, against the company, be barred or defeated by reason of any notice, condition or declaration made or issued by the company, or made or issued by any insurance or provident society or association of railway employees formed, or purporting to be formed, under such Act; or by reason of any rules or by-laws of the company, or rules or by-laws of the society or association; or by reason of the privity of interest or relation established between the company and the society or association, or the contribution or payment of moneys of the company to the funds of the society or association; or by reason of any benefit, compensation or indemnity which the workman, employee or servant, or his personal representatives, may become entitled to or obtain from such society or association or by membership therein; or by reason of any express or implied acknowledgment, acquittance or release obtained by the company or the society or association prior to the happening of the wrong or injury complained of, or the damages accruing, to the purport or effect of relieving or releasing the company from liability for damages for personal injuries as aforesaid.

Judgment in the appeal was delivered by the Privy Council during the month of November, and as the case is one of much importance to railway companies and employees, as well as in its constitutional aspect, the text of the judgment is given in full.

Sir Arthur Wilson in delivering the judgment of the Judicial Committee (for Lord Dunedin) said:—

The question on this appeal is as to the competency of the Dominion Parliament to enact the provisions contained in Section 1 of 4 Edw. VII., cap. 31 of the Statutes of Canada.

These provisions may be generally described as a prohibition against any "contracting out" on the part of railway companies within the jurisdiction of the Dominion Parliament from the liability to pay damages for personal injury to their servants.

It is not disputed that in the partition of duties effected by the British North America Act, 1867, between the provincial and Dominion legislatures, the making of laws for through railways is entrusted to the Dominion.

The point, therefore, comes to be within a very narrow compass. The respondent maintains, and the Supreme Court has upheld his contention, that this is truly railway legislation. The appellants maintain that under the guise of railway legislation, it is truly legislation as to civil rights, and, as such, under section 92, sub-section (13) of the British North America Act, appropriated to the provinces.

The construction of the provisions of the British North America Act has been frequently before their lordships. It does not seem necessary to recapitulate their decisions. But a comparison of two cases decided in the year 1894—viz., "Attorney-General of Ontario vs. Attorney-General of Canada" (1894, A.C., 189) and "Tennant vs. Union Bank of Canada" (1894, A.C. 31)—seems to establish these two propositions: First, that there can be a domain in which provincial and Dominion legislation may overlap, in which case neither legislation will be *ultra vires*, if the field is clear; and second, that if the field is not clear, and in such a domain the two legislations meet, then the Dominion legislation must prevail.

Accordingly, the true question in the present case does not seem to turn upon the question whether this law deals with a civil right which may be conceded—but whether this law is truly ancillary to railway legislation.

It seems to their lordships that, inasmuch as these railway corporations are the mere creatures of the Dominion Legislature—which is admitted—it cannot be considered out of the way that the Parliament which calls them into existence should prescribe the terms which were to regulate the relations of the employees to the corporation. It is true that, in so doing, it does touch what may be described as the civil rights of those employees; but this is inevitable, and, indeed, seems much less violent in such a case, where the rights, such as they are, are, so to speak, all *intra familiam*, than in the numerous cases which may be figured where the civil rights of outsiders may be affected.

As examples may be cited provisions relating to expropriation of land, conditions to be read into contracts of carriage, and alterations upon the common law of carriers.

In the factum of the appellants it is, *inter alia*, set forth that the law in question might "prove very injurious to the proper maintenance and operation of the railway. It would tend to negligence on the part of employees, and other results of an injurious character to the public service and the safety of the travelling public would necessarily result from such a far-reaching statute."

This argument is really conclusive against the appellants. Of the merits of the policy their lordships cannot be judges, but if the appellant's factum properly describes its scope, then it is indeed plain that it is properly ancillary to through railway legislation.

Their lordships will, therefore, humbly advise His Majesty to dismiss the appeal. There will be no costs.

(Grand Trunk Railway Co. vs. Attorney-General of Canada: 5th, November, 1906: Privy Council.)

Validity of Release of Claims for Damages.

A Divisional Court has allowed an appeal from the judge at the trial, which dismissed the action on the ground that no notice of action had been given, and on the further ground that plaintiff had executed a release of all

claims before action. Plaintiff, a steam engineer in the employ of defendants, was injured by the bursting of a blow-pipe attached to the boiler which supplied the steam power to the defendants' mill, and brought action under the Workman's Compensation for Injuries Act to recover damages for the injuries sustained. Defendants, besides denying any negligence on their part, and alleging contributory negligence on the part of plaintiff, set up the payment before action of $30 in full settlement, satisfaction and discharge of plaintiff's claim. The further objection was taken, that no notice was served as required by the Act. The jury answered the questions submitted to them in plaintiff's favor and assessed the damages at $250. The trial judge held that the want of notice was culpable, and further upheld the release as being binding upon plaintiff and dismissed the action. On appeal the Divisional Court held that under the circumstances disclosed in the evidence the failure to give the notice was excusable, and should be excused, no prejudice having been caused to defendants, and that the release in the circumstances in which it was given, was invalid and no bar to the action.

In the result the appeal was allowed, and judgment was ordered to be entered in plaintiff's favor for $220, the amount awarded by the jury less the sum of $30 already received by him.

(Smith vs. McIntosh, 27th October, 1906 : Divisional Court.)

Contributory Negligence.

In a case noted in the July number of the Labor Gazette, the Court of Appeal has allowed an appeal from the judgment of a Divisional Court and dismissed the action. The jury at the trial, in answer to questions submitted to them, found, among other things, that plaintiff was guilty of negligence which caused or contributed to the accident, and that this negligence consisted in not moving the crane closer to the platform. The Court held that these findings, supported as they were by the evidence, were sufficient to dispose of the case in favor of the defendants.

(Wilson vs. Hamilton Steele Co., 3rd November, 1906.)

Machinery not Properly Guarded.

At the last Milton Assizes plaintiff recovered a verdict for damages for injuries sustained while in the employ of defendants. Plaintiff was working in defendant's planing mill at Guelph, and was assisting in the ripping of boards at a rip-saw, which was unguarded, and lost the thumb of his right hand, and had two fingers probably permanently injured. Plaintiff contended that the defendant should have had the saw so guarded as to protect workmen from injury, while the defendant alleged that there was no negligence attributable to them and that the accident was due to plaintiff's own negligence. Judgment was ordered in accordance with the verdict.

(Hutchinson vs. Robert Stewart, Limited, 21st November, 1906.)

Breach of Alien Labor Act.

A fine of $50 and costs was imposed on Mr. Gerard Heintzman, President of the Gérard Heintzman Co., Ltd., at the Police Court at Toronto recently for a breach of the Alien Labor Act. The complaint was that defendant had assisted in the importation of one Thomas Podginivick, alias William Heidleberg, under contract to perform labor and service in Canada. For the defence it was contended that the alien was brought to Toronto by the

Thiel Detective Agency to act as a detective in defendant's factory where there was a strike on at the time, and that there was no contract between defendant and the alien, and that he was not imported by the Company. The Police Magistrate, however, held that defendant was guilty of a breach of the Act, inasmuch, as the Detective Agency was acting on behalf of the Company.

(Rexvs. Heintzman, 26th November, 1906; Denison, P.M.)

Fined for Intimidation.

Five men were fined $15 each at Hamilton recently for intimidating strike breakers at Peregrine's coal yards. Some coal drivers went on strike and defendants threatened those who had taken the strikers' places.

(Rex vs. Anon, 6th November, 1906: Police Court.)

Picket Fined for Abusive Language.

F. R. was recently fined at Toronto for using abusive language towards a strike-breaker employed at the factory of the Gerard Heintzman Co., Ltd. It was shown that defendant was acting as a picket and had spoken in an abusive manner. A fine of a dollar and costs was imposed with an intimation that any repetition of the offence would be visited with more severe punishment.

(Rex vs. Rinneard, 31st October, 1906; Kingsford, P.M.)

FROM LABOR GAZETTE, JANUARY.

Strike of Street Railway Employees at Hamilton, Ont.

Friction between the Street Railway Company and its employees arose over two years ago, when an agreement was dated at the time of signing, a delay of over two months, rather than when it began to take effect. Consequently, when the old agreement expired this year, there were those of the employees who wished to present a new agreement in June instead of August. When the new agreement, embodying an increase in wages and a reduction in hours was finally presented to the management of the railway in August, it was refused and a strike was narrowly averted by both parties consenting to arbitrate their demands. The Arbitration Board subsequently appointed, rendered an award which became the immediate cause of the strike. The men claimed that the Company failed to fulfil the the conditions while the Company stated that the real cause of the dispute was a further demand for increased wages, as by the award the hours of labour were so decreased that the increase in wages did not have the effect of increasing the wages of the employee per day. The Street Railway employees therefore went on strike on November 4th, being joined on the 8th by 20 shopmen, bringing the total number affected to about 180.

All attempts to settle the dispute were ineffectual. A few days after the commencement of the strike, such serious disturbances took place as to warrant the reading of the Riot Act and the calling out of troops from Toronto. On November 27th, the President of the International Union arrived at Hamilton, and negotiations were again opened. Both parties then agreed to allow the intervention of the Ontario Railway and Municipal Board and the strike

was terminated on the 30th, the men returning to work pending the decision of the Board. On December 6th, the award and agreements were given and have proved satisfactory to both parties.

Strike of Iron Moulders at Hamilton, Ont.

With regard to a strike of 43 iron moulders of the Canadian Iron and Foundry Company of Hamilton, Ont., who went out on August 29th, the Department received the following communication from the Company.

"Though we were operating our shop for about 10 days with a reduced output, we now have sufficient independent help to operate our plant to its full output and all negoitations are off toward any settlement at the present time."

The Union, however, maintains that the Company is still affected and that the strike is still in existence, but there are only two men at present in receipt of strike pay, the others having obtained employment in other shops.

Strike of Metal Polishers and Buffers, at Toronto, Ont.

No settlement of the strike of metal polishers and buffers which took place at Toronto, Ont., was reported at the Department during the month. The dispute, affecting 34 employees and 7 firms, commenced on November 23, owing to the refusal of the employers to grant a demand for a minimum scale of wages of 27½c. per hour.

Strike of Piano Workers at Toronto, Ont.

The strike of piano workers at Toronto which commenced on September 1, was terminated on December 8. The cause of the dispute was the refusal of the employers to grant an increase in wages, closed shop, and regulation of apprenticeship and abolition of contract systems. During the progress of the strike, several attempts were made to obtain a conference but the employers declined in any way to recognize the union. On December 8, the men returned to work under conditions existing prior to the strike.

Strike of Garment Workers at Toronto, Ont.

A strike of 200 garment workers at Toronto, continued throughout the month. The cause of the dispute was the refusal of this company to maintain an open shop. All attempts to effect a settlement failed.

THE LAWS RELATING TO LABOR

Chronology of Ontario's Labor Laws.

Apprentices and Miners' Act. Passed, 1871. Amended, 1874. Cap. 161 R.S.O., 1897.

Mechanics' and Wage-earners' Liens. Passed, 1873. Amended, 1874, 1878, 1882, 1884, 1887, 1890, 1896, 1897. Cap. 153, R.S.O. 1897.

Master and Servant Act. Passed, 1873. Amended, 1886. Cap. 157, R.S.O., 1897, 1904.

Immigration Aid Societies' Act. Passed, 1873. Cap. 212, R.S.O., 1897, 1904.

Act to Facilitate the Adjustment of Disputes between Masters and Workmen. Passed, 1873. Cap. 159, R.S.O., 1897.

Act Respecting Innkeepers. Passed, 1874. Amended, 1882. Cap. 187, R.S.O. 1897, 1904.

Act Respecting Public Meetings. Cap. 230, R.S.O., 1897.

Act Respecting Threshing Machines. Passed 1874. Cap. 265, R.S.O. 1897.

Act Respecting Co-operative Associations. Passed, 1880. Amended, 1884. Cap. 202, R.S.O., 1897.

Act Respecting Safety of Railway Employees. Passed, 1881. Cap. 207, R.S.O., 1897.

Act Respecting Accidents to Employees on Railways. Passed, 1881. Cap. 266, R.S.O., 1897.

Bureau of Industries. Established, 1882.

Act Respecting Pawnbrokers. Passed 1884. Cap. 188, R.S.O., 1897.

Factories Act. Passed, 1884. Amended, 1887, 1889, 1895, Cap. 246. R.S.O., 1897. Further amended, 1901, 1902, 1904.

Act Respecting Wages. Passed, 1888. Cap. 156, R.S.O. 1897, 1899.

Workmen's Compensation for Injuries Act. Passed, 1886. Amended 1887, 1893, 1896, 1899. Cap. 160, .S.O., 1897.

Lord's Day Observance Act. Passed, 1885. Cap. 246, R S.O., 1897.

Shops Regulation Act. Passed, 1888. Amended, 1889-1897. Cap. 257, R.S.O., 1897. Further amended, 1900, 1901, 1904.

Egress from Public Buildings, Passed, 1888. Cap. 263, R.S.O., 1897.

Trades Disputes Act. Passed, 1890. Amended, 1894, 1897. Cap. 158 R.S.O., 1897. Further amended. 1902.

Woodmen's Lien Act. Passed, 1891. Amended, 1894, 1896, 1897, 1899. Cap. 154, R S.O , 1897.

Miners' Act. Passed, 1892. Cap. 36. R.S.O., 1897.

Matters under Municipal Act. 1892, 1893, 1894, 1895, 1898. Cap. 223, R.S.O., 1897, 1904, 1905.

Insurance by Trade Unions. Passed, 1892. Amended, 1897. Cap. 203, R.S.O., 1897.

Act Respecting School for Artisans. Passed, 1892. Amended, 1895. Cap. 223, R.S.O., 1897.

Act Respecting Lien for Wages on Street Railways. Passed 1895. Cap. 208, R.S.O., 1897.

Labor on Public Works. Passed, 1896, Amended, 1897. Cap. 155, R.S.O., 1897, 1900.

Act Respecting Liability of Directors' Companies for wages. Passed, 1896. Sec. 85, Cap. 191, R.S.O., 1897.

Act Respecting Liability of Mining Companies for Wages. Passed, 1896. Cap. 197, R.S.O., 1897.

Act Respecting Technical Schools. Passed, 1897.

Act Respecting Immigration of Children. Passed, 1897. Cap. 262, R.S.O., 1897.

Resolution Respecting Fair Wages on Public Works. Passed, 1900.

Act Creating Bureau of Labor. Passed, 1900.

SYNOPSIS OF THE LABOR LAWS OF ONTARIO.

The Mines Act.

R.S.O., 1897, chap. 36, provides that no boy under the age of fifteen years shall be employed in or allowed to be, for the purpose of employment, in any mine

to which this Act applies, below ground. The Act applies to all mines, quarries and pits, and oil, gas and salt wells, and other openings from which ores and minerals of any kind or class are raised or taken, and to all furnaces or works for smelting or otherwise treating rocks, ores or clays, sands, oils, brines or other minerals for any economic object.

No boy or young male person of the age of fifteen and under the age of seventeen shall be employed or allowed to be for the purpose of employment in any mine to which this Act applies below the ground on Sunday or for more than forty-eight hours in any one week, or more than eight hours in any one day.

Any appliance used for the purpose of entrance to, or communication to or from any part of the mine, and which is operated by steam or other mechanical power, or by animal or manual labor, must be in charge of a male of at least twenty-one years of age. Where the motive power is supplied by an animal, the driver of such must be at least sixteen years of age.

No wages shall be paid to any person employed in or about any mine, etc., at or within any public house, beer shop or place for the sale of intoxicating liquors.

Each owner is required to make returns to the Bureau of Mines each year of the number of employees, their ages and hours of labor, the rate of wages of each class, together with weights and estimates of values of minereals, dressed, and undressed, etc., and may be required by the Bureau of Mines to make such returns monthly or quarterly.

Provision is also made for proper ventilation, also care of explosives used in or about the mine, etc., also for the appliances of safety in the operation of shafts, cage, etc., Accommodation is also required near the entrance to the mine for the conveniently drying and changing of clothes of those employed in or about the mine, etc.

Provision is made for the reporting of any accident in writing within twenty-four hours of the occurrence of such accident, giving full particulars thereof.

Mechanics' and Wage-Earners' Liens.

R.S.O., 1897, cap. 153, provides protection to wage-earners and contractors for loss on account of labor or material furnished in the erection of buildings or the construction of machinery.

The Act not merely recognizes the new form of liability, but provides the means of establishing and enforcing claims arising under it. The original Act has been several times amended, with a view to make it more simple and perfect in its working. The Act also provides that the liens for wages shall, to a certain amount, have a priority over all other liens, and over any claims by the owner against the contractor, on account of failure to complete his contract.

In 1890 an Act was passed to simplify procedure for enforcing mechanics' liens. One clause provides that without issuing a writ of summons or taking any other preliminary proceedings, the plaintiff may file a statement of claim in the office of a master or official referee having jurisdiction in the county wherein the lands are situate. It is also provided that any number of lien holders may join in one action. The ruling certificate of the master or official referee, when filed in the proper office, shall become a judgment of the High Court, when the sum is $400.00 or over, of the County Court when less than $400 00, but over $100.00, and of the Division Court when the sum is less than $100.00. The fees payable for entering such certificate as a judgment are as follows: In the High Court, $1.60, in the County Court, 80 cents, in the Division Court, 50 cents.

A further amendment provides that a device by any owner or contract, or which shall be adopted in order to defeat the priority of wage-earners for their wages under the several Acts relating to mechanics' liens, shall, as respects such wage-earners, be null and void.

A further provision regulates that in the case of wages due to any mechanic or other person in respect of work referred to in the 4th section of the Mechanics' Lien Act, the jurisdiction of a police magistrate in a city under the Act respecting master and servant shall extend wages for thirty days, or for a balance equal to the wages for thirty days, though the same or the balance thereof exceed the sum of $40.00 in the said section mentioned.

It is also provided that where no specific rate of wages has been expressly agreed to between the parties, the city police magistrate may order payment of the wages, reckoning the amount thereof according to the current rate of wages in the city in like cases, or according to what may appear to be a just and reasonable allowance, and any order of a city police magistrate for the payment of such wages as aforesaid shall be payable forthwith.

Woodmen's Liens.

R. S. O., 1897, cap. 154.—This Act applies to the Districts of Muskoka Parry Sound, Nipissing, Algoma, Manitoulin, Thunder Bay, and Rainy River, and to the provisional County of Haliburton, its purpose being to protect the wages of all engaged in those localities, in cutting, skidding, felling, hauling, scaling, banking, driving, running, rafting or booming any logs, or timber, and any work done by cooks, blacksmiths or others, usually employed in connection therewith, giving them priority of right for wages above all other claims, except such right as the Crown may have upon logs or timber for, or in respect of any dues or charges, or which any timber slide company, or owner of slides and booms, may have thereon or in respect of tolls.

This Act also provides that no payment of wages shall be made or offered to any person for any labor or services performed upon, or in connection with any logs or timber in the said districts or provisional county, by any cheque, order, I.O.U., bill of exchange, promissory note, or other undertaking other than a bank note, or bill drawn upon or payable at or within any place or locality not within the Province of Ontario. A violation of this provision incurs a penalty of not less than $5.00 or more than $20.00, recoverable by summary proceedings before a stipendiary or police magistrate or justice of the peace, under the Ontario Summary Convictions Act.

Labor on Public Works.

R. S. O., 1897, cap. 155. — This Act secures payment of wages for labor performed in the construction of public works. Any foreman, workman or laborer, or by any team employed on the work, giving notice not later than two months after the wages are due to the member of the Executive Council entering into the contract, for and on behalf of His Majesty, or having the supervision of the execution of the contract where the same is made, may cause such claim to be paid to the extent of any moneys or securities at the time of the filing of the said claim in the hands of the Crown for securing the performance of the contract.

The Act also provides that the said member of the Executive Council may, in writing, require every contractor or sub-contractor to forward a list each month, showing the names, rate of wages, amounts due and unpaid for wages for labor done, such list to be attested on oath.

Failure to comply with this demand incurs a penalty of not less than $10 or more than $100 for every day during which default continues.

Wages.

R. S. O., 1897, cap. 156.—An Act respecting wages—applies to wages or salary, whether payable by the day, week, piece, job or otherwise. When an assignment is made for the general benefit of creditors, the assignee shall pay in priority to the claims of the ordinary or general creditors of the person making said assignment, the wages or salaries of all persons in the employment of such person at the time of making such assignment or within one month before the making thereof, not exceeding three months' wages or salary, and such persons shall be entitled to rank as ordinary or general creditors for the residue, if any, of their claims. This provision also applies to the liquidation in distributing the assets of a company under the provisions of the Joint Stock Companies Winding-up Act, also to the sheriff who has made seizure, under the Creditors' Relief Act, also under the Act respecting Absconding Debtors, and also applies to the administration of the estate of deceased person. This Act is not intended to apply to an assignment made under the provision of any Act of the Parliament of Canada relating to or respecting bankruptcy or insolvency.

By an amendment of 1899, it was also provided that where an estate was not sufficient to meet priority of claims for wages or general debtors, that the priority extends to the wage-earner over all others excepting the cost of liquidation.

It is also provided that the executor, liquidator, administrator, or other person engaged in winding up the estate, may forthwith, upon such estate coming into his hands, pay all claims for wages, without being chargeable, in case it shall in the end appear that said estate was insufficient to cover such payment, provided that he has acted in good faith, and had reasonable ground to believe that the estate would be sufficient.

The Trades Arbitration Act.

To facilitate the Adjustment of Disputes Between Master and Workmen R. S. O., 1897, chap. 159.

This Act provides that any number of masters and workmen in any city, town, township or village in Ontario, may mutually agree to the formation of a board of arbitration for the purpose of settlement of any industrial disputes that may arise at any time between them in their relations as employers and employees.

The masters and workmen shall jointly sign a memorandum, whereby it is mutually agreed to establish such board; such memorandum to be filed with affidavits verifying the signatures thereto in the registry office of the registry division within which the masters and workmen reside. The board shall consist of not less than two masters and two workmen, not more than ten masters and ten workmen and a chairman, and the number to constitute the board other than the chairman shall be inserted in the memorandum, but no member of the board shall adjudicate in any case in which he or any relation of his are one of the parties.

The board shall have the power to appoint their own chairman and two clerks, one for the masters and the other for the workmen's portion thereof. The board is given all the powers conferred upon arbitration by the Arbitration Act, R. S. O., 1897, chap. 140, s. 10.

Any award made by the board is final and conclusive between the parties thereto, without being subject to review of challenge by any court or authority whatsoever.

A committee of the board, to be denominated the committee of reconciliation, shall be appointed by the board, consisting of one master and one workman, who shall sit at such times as shall be appointed, and shall be renewed from time to time as occasion may require; and all cases or questions of dispute which are submitted to the board by both parties thereto shall, in the first instance, be referred to the committee, who shall endeavor to reconcile the parties in difference. When such reconciliation is not effected, the matter in dispute shall be referred to the board, to be disposed of as contested matter.

An Act Respecting Master and Servant.

R. S. O., 1897, cap. 157.—Provides that no voluntary contract or services or indentures entered into by any parties shall be binding on them or either of them for a longer time than a term of nine years from the day of the date of such contract. Where an agreement is entered into between the master and servant, by which a definite share of the profits or proceeds of a business is allotted to a servant, either in lieu of or additional to his salary, wages or other remuneration and such agreement not creating any relation in the nature of a partnership, such agreement shall be deemed lawful, provided that in such case the servant must accept the statement of the said master as to proceeds involved in the agreement, and shall not have power to examine accounts of said master.

An agreement, whether verbal or written, entered into between master and servant, for the performance of any duty or service whatsoever, shall be binding, but a verbal agreement shall not exceed the term of one year.

The Act also provides that no tavern keeper or boarding house keeper shall keep the wearing apparel of any servant or laborer in pledge for an expense incurred to a greater amount than $6, and shall surrender immediately any goods kept by said tavern or boarding house keeper under such circumstances upon the tender of such $6 or less sum due. This does not apply to other property of the servant or laborer.

Any agreement, verbal or written, between any person, and any other person not a resident of Canada, for the performance of labor or service in the Province of Ontario, shall be void and of no effect as against the person only migrating or coming. This foregoing provision does not apply to teachers, professional actors, artists, lecturers or singers, or to such skilled workmen not procurable in Canada.

Proceedings may be taken under this Act for the collection of wages within one month after the engagement or employment has ceased, or within one month after the last instalment of wages under the agreement of hiring has become due. Where proceedings are taken under this Act before a police magistrate, and payment of wages is ordered by him to be made by the master or employer to the servant or laborer, and the same are not paid within the time limited by the order, the same proceedings may be taken by the person claiming the benefit of the order as may be taken by a party having an unsatisfied judgment or order in the Division Court for the payment of any debt, damages, or costs, as respects the examination of the judgment debtor touching his estate and effects, the means he has of discharging his liability, and the disposal he has made of any property, and the police magistrate shall have the like power and authority to enforce payment of the debt as are possessed by the Division Court Judge in like cases. The police magistrate may also, if he thinks fit, name in the order for payment of wages such time, not exceeding twenty-one days, as to him may seem just and reasonable for the payment of the same and costs, and in case of non-payment within such time, the complainant shall be entitled to take forthwith the proceedings for enforcement provided by the Division Courts Act with respect to judgment debtors.

In the case of wages due and no specific rate has expressly been agreed upon between the parties, the police magistrate has the power to fix the rate on the basis of the current rate of wages in the city in like cases, or according to what may appear to be a just and reasonable allowance.

Every agreement or bargain, verbal or written, expressed or implied, entered into, having for its object the waiving of the provisions of this Act, is declared null and void and of no effect as against any workman, servant, laborer, mechanic or other person.

By an amendment of 1904—a clause exacting repayment of advances—paid to employee—prior to commencing employment and inflicting penalty for leaving before such advances were repaid—was repealed.

Trade Disputes.

R. S. O., 1897, cap. 158.—An Act respecting Councils of Conciliation and Arbitration for settling industrial disputes.

The preamble to the Act recites: There is reason to believe that the establishment of Councils of Conciliation and Arbitration for the friendly settlement of disputes between employers and employees, would conduce to the cultivation and maintenance of better relations and more active sympathies between employers and employees, and would be of benefit in the public interest by providing simple methods for the prevention of strikes and lock-outs, from which industrial operations and the welfare of the country generally may suffer injury.

The Act applies to any person or body of persons, incorporated or unincorporated, employing not less than ten workmen in the same business in which the trade dispute has arisen, and their employees.

A claim or dispute under this Act shall include any disagreement between any employer and his employees in respect of any of the matters following:

1. The price to be paid for work done or in course of being done, whether such disagreement shall have arisen with respect to wages, or to the hours of time of working.

2. Damage alleged to have been done to work, or delay in finishing the same; not finishing the same according to agreement; or dispute respecting materials supplied to employees or alleged to be bad, unfit or unsuitable.

3. The price to be paid for mining any material or substance mined or obtained by mining, hewing, quarrying or other process; or the allowances, if any, to be made for bands, refuse, faults, or other cause whereby the mining of the material substance is impeded.

4. The performance or non-performance of any stipulation or matter alleged to have been in the agreement, whether in writing or not.

5. Insufficient or unwholesome food supplied to employees where there is an agreement to victual them, or to supply them with provisions or stores of any kind.

6. Ill-ventilated or dangerous workings or places in mines, or unwholesome or insanitary rooms or other places of accommodation, in which work is being performed, or want of necessary conveniences in connection with such rooms or places.

7. The dismissal or employment under agreement of any employee or number of employees.

8. The dismissal of any employee or employees for their connection with any trade or labor organization.

Duties, etc., of the Registrar.

It shall be the duty of the Registrar under this Act to deal with all applications coming within the meaning of the Act; to keep a register in which shall be entered all particulars of cases referred to the Council of Conciliation, and the settlement thereof. The Registrar shall have the power to summon witnesses and issue notices in connection with the sittings of each Council of Conciliation.

Council of Conciliation.

Such council as above mentioned, shall consist of four councillors, two to be nominated by each of the parties in dispute; each nomination in writing to be lodged with the Registrar.

The Council shall deal with cases in which the parties of the dispute jointly agree to refer the claim or dispute to the Council of Conciliation for settlement. Upon receipt of application the Registrar shall refer same to the Council, and under the Act shall carry out directions of the Council in the endeavor to effect settlement of the dispute or claim.

Either party of the dispute or claim may, for the purpose of this Act, be represented by one or more persons, not exceeding three, authorized by such party as manager or managers in that behalf, and such party shall be bound by the acts of this representative or representatives; where the party number fewer than twenty, the manager must be authorized in writing, signed by the members of the party, to act for and on their behalf. Where the party number twenty or more, the manager may be elected in such manner as the members of the party think proper.

The statements of those thus agreeing to refer their dispute to the Council of Conciliation, should be forwarded to the Registrar before the meeting of the Council. When the parties of the dispute or claim have nominated their conciliators, the Registrar shall, by notice in writing, convene a meeting of the conciliators, mentioning time and place of meeting the same being selected with due regard to the convenience of all concerned. The Council of Conciliation shall transmit to the Registrar a report setting forth the result of the reference. In case such report is to the effect that the Council has failed to bring about any settlement or adjustment of the dispute or claim, the Registrar shall transmit a copy of the report to each party of the dispute or claim; whereupon either party may require the Registrar to refer the dispute to the Council of Arbitration for settlement.

Council of Arbitration.

There shall be two Councils of Arbitration; one for the settlement of disputes and claims between railway companies (including street railway companies), and their employees, both in respect of railway construction or traffic on railways, and a Council of Arbitration for the settlement by award in respect of disputes and claims other than between railway companies and wage-earners employed in respect of railway construction or traffic.

Each Council shall consist of three members, one to be appointed by the Lieutenant-Governor on the recommendation of the employees, and one to be appointed by him on the recommendation of the employers. The third member to be appointed shall be President of the Council and may be appointed by the Lieutenant Governor on the recommendation of the two members already appointed, within twenty-one days of their appointment. Failing in this, the Lieutenant-Governor shall appoint as President of the Council an impartial person, not likely to be biased in favor of or against employers or employees. The same person may be President of both Councils.

As soon as practicable after the appointments have been made, the names of the members of the Council shall be notified by the Registrar in the Ontario Gazette. The Lieutenant-Governor may cancel the appointment of any member on the recommendation of the authority by which his appointment was recommended. The term of office of a member of a council shall be two years; and at the end of every term of two years, a fresh appointment of members shall be made in manner aforesaid. Every member shall be eligible for reappointment.

Qualification of Voters in the Interest of Employers.

For the person to be recommended by the employers every employer in the Province, having at least ten persons in his employment, shall be entitled to one vote; every organization in the Province, whether incorporated or unincorporated, representing the interests of employers, each member of which has at least ten persons in his employment, shall be entitled to one vote.

Every Board of Trade in the Province, legally constituted, shall be entitled to one vote for a representative of the employers in each Council.

Qualification of Voters in the Interest of Employees

For a person to be recommended by employees in matters not belonging to railways, every trades and labor council, every district assembly of the Knights of Labor, every federated council of building trades, every lawfully incorporated trades union, every organization of wage-earners of an industrial calling primarily constituted for, and actually and *bona fide* operated for the regulation of the wages and hours of labor as between employers and employed, shall be entitled to one vote; but this shall not be deemed to include co-operative associations or societies formed under the Revised Statutes respecting Co-operative Associations.

For choosing the person to be recommended by employees of railway companies as a member of the Council of Arbitration in matters belonging to railways, every organization in the Province, whether incorporated or unincorporated, exclusively representing the interest of wage-earners employed in respect of railway construction or traffic on railways shall be entitled to one vote; but this shall not be deemed to include co-operative societies or associations.

The Registrar shall give notice in the Ontario Gazette, calling on all organizations and persons entitled to vote for a member to be recommended to either council, or claiming to be so entitled to communicate with him on or before the 1st day of August, 1898, and every second year thereafter. Such notice is to be inserted for at least four weeks before the said day in each of the said years.

The Registrar shall forthwith, after the 1st day of August aforesaid, prepare a list of the persons and organizations appearing to be entitled to vote for a person to be recommended for appointment to each of the said Councils respectively, and may refer any doubtful claim to the Minister of Agriculture for his advice or direction.

Each list so to be prepared, shall give the last known postoffice address of every person and organization entitled to vote as employers and employees respectively, for the said Councils, respectively, and shall be published in The Ontario Gazette, and shall be open to inspection at any time by any person without fees, in the office of the Registrar, during office hours.

Between the 1st and 30th days of September, 1898, and between the same days of every second year thereafter, the Registrar shall transmit by post to

the address of each person and organization entitled to vote, a voting paper ; and such voting paper may be in the following form :

Voting paper of (naming the person or organization).

A. B. (person recommended), is hereby recommended to be appointed a member of the Council of Arbitration for disputes between railway companies and their employees (or in matters not relating to railway disputes), under the Ontario Trades Disputes, Conciliation and Arbitration Act, on behalf of the employers or employees, as the case may be).

(Signed).

The voting paper of any person entitled to vote under this Act as an employer shall be signed by himself or by some duly authorized person ; and the voting paper of any organization entitled to vote shall be signed by the president or vice-president of the organization, or, in the absence of such president or vice-president, by any office-bearer of the organization other than the secretary thereof, and shall be countersigned by the secretary or the acting secretary, or, in the absence of such secretary or acting secretary, by any two members not being office-bearers. The voting papers of a Board of Trade shall be under the corporate seal of the Board.

The voting paper shall be forwarded to the Registrar in a stamped envelope, addressed to the Registrar of Councils of Conciliation and Arbitration, Toronto, and endorsed, "Voting paper under the Ontario Trades Dispute, Conciliation and Arbitration Act.

Every voting paper shall be forwarded by mail or other to the Registrar, before the 15th day of October, in the year in which the voting is to be held, and no voting paper received after said date shall have any effect or validity.

After the 15th day of October, the Registrar shall count the recommendations of employers and employees for each council, and shall forward same to the Minister of Agriculture, with report thereon ; and the Minister of Agriculture shall publish in the *Ontario Gazette* the names of the persons appointed by the Lieutenant-Governor upon such recommendations to be members of each Council ; and also the names of, and the number of votes of the five persons who shall receive the greater number of votes for each council on behalf of employers and employees, respectively.

In case either employers or employees, or both fail to recommend any person to represent them on either or both the Councils, as provided for in this section, the Lieutenant-Governor-in-Council may appoint a person or persons to fill the vacancy or vacancies.

The Mayor of any city or town, upon being notified that a strike or lock-out is threatened, or has actually occurred within the municipality, shall at once notify the Registrar thereof in writing, stating the name of the employer the nature of the dispute, and the number of employees involved, as far as his information will enable him to do so.

Upon being notified that a strike or lock-out is threatened or has taken place, it shall be the duty of the Council of Arbitration, under this Act, to communicate with the parties concerned as soon as practicable, and endeavor by mediation to effect an amicable settlement, and if deemed best, to enquire into the causes of controversy, it shall proceed as provided in this Act in the case of a reference.

The Council of Arbitration shall sit and conduct its proceedings as an open court, and in making its decision shall be governed by the principles of equity and good conscience. The President shall for the purpose of preserving order

during any sitting of the Council, have all the powers of a judge of a High Court of Justice, save that he shall not have the power of committing for contempt.

Any two members shall constitute a quorum for the transaction of business, and may hold meetings at any time and at any place in the Province of Ontario.

The Council may order that an examination or investigation may be held before any one member of the Council, but such member shall report to the Council, and his decision shall not be considered binding until approved of by the Council or a majority thereof.

The report of award of the Council shall be made within one month after its hearing of a reference, and shall be by, and under the hands of, a majority of the members of the Council.

The report of award, or a copy thereof, shall be deposited in the office of the Registrar, and shall be open to inspection during office hours without charge.

Miscellaneous Provisions.

For the purposes of this Act the Councils of Conciliation and Arbitration shall have power (*a*) to visit the locality where the dispute has arisen and hear all persons interested who may come before them; (*b*) to summon witnesses and to administer oath, or to take the affirmations of any person attending as a witness before the Council. On refusal of any person to attend as a witness, application may be made in a summary way to a Justice of the Peace for an order compelling such attendance.

No fees shall be paid to the Registrar by any party in respect of any proceedings under this Act.

Every member of such Council shall be remunerated as follows:

Preliminary meetings	$3 00
Whole-day sittings	4 00
Half-day sittings	2 00

AN ACT TO AMEND THE ACT RESPECTING COUNCILS OF CONCILIATION AND OF ARBITRATION FOR SETTLING INDUSTRIAL DISPUTES, S.O., CAP. 22, 1902.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

1. Section 4 of the Trades Disputes Act is amended by adding the following sub-sections:

(4) If any difference shall arise between any corporation or person employing ten or more employees, and such employees, threatening to result, or resulting in a strike on the part of such employees, or a lock-out on the part of such employer, it shall be the duty of the Registrar, when requested in writing to do so by five or more of said employees or by the employer, or by the mayor or reeve of the municipality in which the industry is situated, to visit the place of such disturbance and diligently seek to mediate between such employer and employees.

(5) It shall be the duty of the Registrar to promote conditions favorable to a settling by endeavoring to allay distrust, to remove causes of friction, to promote good feeling, to restore confidence and to encourage the parties to come together and themselves effect a settlement, and to promote agreements between employers and employees with a view to the submission of differences to conciliation or arbitration before resorting to strikes or lock-outs.

WORKMEN'S COMPENSATION FOR INJURIES, R. S. O., 1897, CAP. 160.

This Act applies to all wage-earners while engaged in their daily occupation for injuries received by reason of any defect in the condition of arrangement of the ways, works, machinery, plant, buildings or premises connected with, intended for or used in the business of the employer, or by reason of the negligence of any person in the service of the employer, who has had any superintendence entrusted to him, or who has the charge or control of any points, signal, locomotive, engine, machine or train upon a railway, tramway or street railway.

If the injuries received result in the death of the workman, his legal representative, or those entitled in case of death, shall have the same right of compensation and remedies against the employer, as if the workman had not been a workman of, nor in the service of the employer, nor engaged in his work.

Work Done Under Contract.

Where the execution of any work is being carried into effect under any contract, and personal injury is sustained by any workman, through any defect or negligence, as mentioned above, the person for whom the work is done shall be liable to pay compensation for the injury as if the workman had been employed by him, and for that purpose shall be deemed to be the employer of the workman within the meaning of this Act.

Personal injury caused to workman employed on or about any railway

Such injury shall be deemed to have been caused by reason of a defect within the meaning of the clause numbered 1 of section 3 of this Act.

The amount recoverable under this Act, shall not exceed a sum equivalent to the earnings during three years previous to the injury received, in like employment within the Province, or the sum of $1,500, whichever is the larger sum, and such compensation shall not be subject to any deduction or abatement, save as is specially provided for in section 12 of this Act.

When compensation is awarded in the case of the death of a workman, through an injury sustained by him in the course of his employment, the amount recovered may be divided between the wife or husband, parent or child, of the deceased, as the case may be, in such shares as the Court or Judge may direct, or if tried by jury, as the jury may determine.

No action shall be maintainable against any employer, unless notice that the injury has been sustained is given within twelve weeks of the accident, and the action is commenced within six months of the occurrence of the accident or in case of death, within twelve months from the time of death; in the latter case, the want of such notice shall be no bar to the maintenance of such action, if the Judge be of opinion that there was reasonable cause for want of such notice.

Notice under this Act shall give the name and address of the person injured, and shall state in ordinary language the cause of the injury, the date on which it was sustained, and the amount of compensation claimed, and shall be served on the employer, either at his residence or place of business, The notice may also be served by post in a registered letter, and may be deemed to have been served when the letter containing the notice would be delivered in the ordinary course of post.

If the defendant in any action intends to rely for his defence on insufficient notice, or on the ground that he was not the employer of the workman injured, he shall, not less than seven days before the hearing of the action, give notice to the plaintiff of his intention to rely on such defence.

In the trial of an action for the recovery of compensation under this Act before a Judge without a jury, one or more assessors may be appointed by the court or judge, for the purpose of ascertaining the amount of compensation. In any such action a party who desires assessors to be appointed shall, ten clear days before the trial, file application stating the number of assessors he proposes to be appointed, and the names, addresses and occupations of the persons who have expressed, in writing, their willingness to act as assessors. If the applicant has obtained the consent of the other party to the persons named being appointed, he shall file such consent with his application.

This Act, by an amendment of 1899, gives the choice of settlement of claims for injuries, under the Act, by either action or arbitration, subject to appeal by either party to the High Court of Justice.

Apprentices and Minors, R.S.O., 1897, Cap. 161.

Any parent, guardian or other person having the care of a minor, or any charitable society authorized to exercise the powers conferred by this Act, may, if the minor consent, if the minor is a male not under the age of fourteen years, or a female not under the age of twelve years, and without consent if he or she is under such age, constitute to be the guardian of the child, any trustworthy person who is willing to assume the duty of a parent toward the child, but the parent shall remain liable for the performance of any duty imposed by law, in case the guardian fails in the performance thereof.

The guardian shall thereupon possess the same authority over the child as he or she would have were the ward his or her own child, and shall be bound to perform the duties of a parent toward such child.

Rights and Liabilities of Minors.

No minor who is dependent upon charity for support shall be removed from any charitable institution or from the control of any private person who is charitably taking care of the minor, by the father or mother or guardian, against the will of the head of such charitable institution or of such private person, without an order from the Judge of the High Court, or from the Judge of the County Court, or the Mayor or Police Magistrate of the city or town where the minor is; and the judge or other person so empowered may refuse to grant the order unless he is satisified that the removal will tend to the advantage of the minor When a minor, who has no parent or legal guardian, enters into an engagement to perform any service, he shall be liable upon the same, and shall have the benefit thereof as if he were of legal age.

Apprenticing Minors.

A parent, guardian or other person having the care of a minor, or any charitable society authorized to exercise the powers conferred by this Act, may, with the consent of the minor, if a male not under the age of fourteen years, bind him as an apprentice by indenture to any respectable master, mechanic, farmer, or other person carrying on a trade or calling for a term not to extend beyond the minority of the minor; or in the case of a female not under the age of twelve years, may, with her consent, bind the minor to any respectable person carrying on a trade or calling, or to domestic service with any trustworthy person, for a term not to extend beyond the age of eighteen years.

When the father of an infant child abandons and leaves the child with the mother, the mother, with the approbation of two Justices of the Peace

may bind the child as an apprentice to any person as mentioned in the last section, until the child attains the age of twenty-one years in the case of a male, and eighteen in the case of a female, and an indenture to that effect under the hand and seal of the mother and countersigned by such justices, shall be valid, but no child having attained the age of fourteen years, shall be so apprenticed, unless he or she consents.

In a city or town, the Mayor, Judge of the County Court or Police Magistrate, and in a county, the Judge of the County Court of the County, may put and bind for a like period to any person mentioned in the several sections of this Act, with the consent of such person and of the minor (or if such minor is a male under the age of fourteen years, or a female under the age of twelve years, then without the consent of such minors), any minor who is an orphan or who has been deserted by his or her parents or guardian, or any minor who is dependent upon charity for support; and such apprentice and the master of such apprentice shall be held in the same manner as if the apprentice had been bound by his or her parents.

All wages reserved by any indenture or otherwise to be paid for the services of any minor, shall, if not payable to the parent, be either payable to the minor or to some person for the benefit of the minor.

If the master of an apprentice dies, the apprentice, if a male, shall be transferred to the person who continues the establishment of the deceased, and such person shall hold the apprentice on the same terms as the deceased, if living, would have done.

A master may transfer his apprentice, with his consent, to any person who is competent to take or receive an apprentice, and who carries on the same kind of business.

Every master shall provide his apprentice with suitable board, lodging and clothing or such equivalent therefor as is mentioned in the indenture, and shall also properly instruct him in his trade or calling.

Every apprentice shall faithfully serve his master and obey all his lawful and reasonable commands, and shall not absent himself from his service without his consent.

An indentured apprentice leaving his employment is liable to the penalties of the Act, if apprehended in the Province of Ontario, up to three years of his desertion.

An Act Respecting Innkeepers, R.S.O. 1897, Cap. 187.

Every innkeeper, boarding-house keeper and lodging-house keeper shall have a lien on the baggage or property of his guest for the value and property of his guest for the value or price of any food or accommodation furnished, and in addition to all other remedies provided by law, shall have the right, in case the same remains unpaid for three months, to sell by public auction the property of such guest, by giving one week's notice by advertisement in a newspaper of the intended sale, stating the name of the guest, the amount of his indebtedness, and giving a description of the property to be sold and shall pay over the surplus of such sale (if any) to the person entitled thereto, on application being made by him therefor.

Where an innkeeper, etc., or livery stable keeper has by law a lien on a horse or other animal for the price of any food or accommodation supplied to such animal or care bestowed therein, he shall have the right, in addition to the other remedies provided by law, if such price remains unpaid for the space of two weeks, to sell by public auction such horse or other animal, on giving two weeks' advertisement in a newspaper, stating (if known) the name

of the person who brought such horse or other animal to the inn, etc., the amount of the indebtedness, and the name of the auctioneer, and giving the description of the horse or other animal, and after the sale the innkeeper, etc., shall pay over the surplus (if any) to the person entitled thereto on application being made by him therefor.

No innkeeper shall be liable to make good to any guest any loss or injury to goods or property to a greater amount than the sum of $40.00, except in the following cases:

Where such goods or property have been stolen, lost or injured through the wilful act, default or neglect of such innkeeper, or any servant in his employ; where such goods or property have been deposited expressly for safe custody with such innkeeper.

Pawnbrokers, R.S.O. 1897, Cap. 188.

The Act defines any person who takes and receives, by way of a pawn pledge or exchange of any goods for the repayment of money lent thereon, shall be deemed a pawnbroker within the meaning of the Act.

Any person carrying on the trade of pawnbroker shall have license issued by the treasurer of the municipality in which he is carrying on the business. Any person carrying on the business of pawnbroker without a license shall forfeit $50.00 for every pledge he takes, recoverable with costs before police magistrate.

Each pawnbroker is required to exhibit a sign with the word pawnbroker thereon, under a penalty of $40,00.

Each pawnbroker is required to have painted or printed in a conspicuous place in his shop, the rates of profits he is allowed to charge under the Statutes of Canada, which rates are as follows:

R.S.C., Cap. 128, provides that every pawnbroker may take the following rates above the principal sum advanced before he is obliged to re-deliver the goods pawned, that is to say, upon every pledge upon which there has been left out exceeding 50c. the sum of one cent for any time not exceeding one month, and the same for every month afterwards, including the current month, in which the pledge is redeemed, although such month has not yet expired; and so on progressively, and in the same proportion for every sum of fifty cents up to twenty dollars.

When the sum lent exceeds twenty dollars, the pawnbrokers may take up all beyond the amount after at the rate of five cents for every four dollars by the month, and so on in proportion for any fractional sum.

Such sums respectively, shall be in lieu of and taken as full satisfaction for all interest due and charges for warehouse room.

On all pledges where the sum lent exceeds $1.00 the pawnbroker is required to make entry of such in a book kept for the purpose, giving a description of the goods received, in pledge, the sum lent thereon, the date and the name and address of the person making the pledge and whether he is a house-keeper or lodger.

When the amount lent is above $2.00 a separate book must be kept for purpose of entry, the pledges received to be numbered in consecutive order in the book. The pawnbroker shall issue to the person making the pledge, a note or memorandum written or printed, containing a description of the goods pawned, and money advanced thereon, the date and name and address of the person making the pledge, and whether a housekeeper or lodger. On the back shall be printed or written the name and address of the pawnbroker.

For such ticket or memorandum he will be allowed to charge the following rates :

If the sum lent is under $1.00, the ticket shall be free.

If the sum lent is over $1.00 and under $2.00, the charge shall be one cent.

If the sum lent is over $2.00 and under $5.00, two cents may be charged.

If the sum lent is over $4.00 and under $20.00, three cents may be charged.

When the sum lent is over $20.00 and upwards seven cents may be charged.

No goods pledged can be sold by the pawnbroker until one year has expired after the pledge of such goods. If the amount lent exceeds $2.00 the sale must be by public auction, and must be exposed to the public view. And a description of the goods, the date of the pledge, etc., published on two separate days in a public newspaper at least two days before the sale.

Should the goods be sold for more than was due thereon, and in case of demand within three years after the sale, the over plus, after deducting the costs, shall be paid to the person on whose account the goods were pawned.

No pawnbroker shall :

1. Purchase, receive or take any goods in pledge from any person who appears to be under the age of fifteen years, to be intoxicated with liquor, nor

2. Purchase or take in pawn, pledge or exchange the ticket or memorandum of any other pawnbroker.

3. Employ any servant or any other person under sixteen years of age to take any pledge.

4. Receive any goods by way of pawn, pledge or exchange on any fast or Thanksgiving day appointed by authority, or on Sunday, or any other day before 8 o'clock in the morning, nor after 8 o'clock in the evening, except on Saturday and the evening preceding Good Friday and Christmas Day On such days he may keep open his place of business until 10 o'clock p.m.

LIABILITY OF DIRECTORS OF COMPANIES FOR WAGES. R.S.O., 1897, CAP. 191.

The directors of the company shall be jointly and severally liable to the laborers, servants and apprentices thereof for all debts not exceeding one year's wages due for services performed for the company ; but no director shall be liable to an action therefor, unless the company has been sued therefor within one year after the debt became due, nor yet before an execution against the company has been returned unsatisfied in whole or in part ; and the amount due on such execution shall be the amount recoverable with costs against the directors.

LIABILITY OF DIRECTORS OF MINING COMPANIES FOR WAGES. R.S.O., 1897, CAP. 197.

All mining companies in force in Ontario, shall be subject to the provisions of this Act.

The directors of a company shall be jointly and severally liable to the laborers, etc., for all debts not exceeding one year's wages due for services performed ; but no director shall be liable to an action therefor unless the company has been sued therefor within one year after the debt became due, nor yet before an execution against the company has been returned unsatisfied in whole or in part ; and the amount due on such execution shall be the amount recoverable with costs against the directors.

Co-operative Associations. R.S.O., 1897, Cap. 202.

Any seven or more persons who desire to associate themselves together for the purpose of carrying on any trade, labor or business, whether wholesale or retail, except the working of mines, minerals, or quarries, and except also the business of banking and insurance, and the business of a loan corporation within the meaning of the Loan Corporations Act, may make, sign and acknowledge before a Notary Public or Justice of the Peace, in duplicate, and file in the office of the Registrar of the Registry Division in which the business of the association is intended to be carried on, a certificate in writing on the form set forth in the schedule of this Act, or of the same effect together with a copy of the rules agreed upon for the regulation, government and management of the association, signed by such persons respectively.

Upon the filing of the certificate and rules as aforesaid, the members of the association shall become a body corporate by the name therein described, with power to hold such lands as are required for the convenient management of the business.

No association shall be registered under a name identical with that by which any other existing association has been registered, or so nearly resembling such name as to be likely to deceive the members or the public; and the word limited shall be the last word in the name of any association registered under this Act.

A member of an association incorporated under this Act may have shares therein to the amount mentioned in any by-law of the association, provided the same does not exceed $1,000,000.

The liability of the shareholders shall be limited, that is to say: No shareholder shall be in any manner liable for or charged with the payment of any debt due by the association, beyond the amount of his share, and having fully paid up the amount of his share shall not be subject to any further liability.

Every person appointed to an office touching the receipt, management, or expenditure of money, or with the receipt of goods, ware or merchandise, for the purpose of the association, shall before entering upon the duties of his office, give such security as is deemed sufficient by the trustees, which security shall be renewed from time to time as the amount of the business, or other circumstances, may, in the discretion of the trustees be rendered necessary.

The business of the association shall be a cash business exclusively; no credit shall be either given or taken, and no officer, member or servant of the association shall have power to contract any debt in its name, except in respect of rent of the premises required for the business, the salary of clerks and servants, and such like contracts, necessary in the management of the affairs of the association; every thing shall be bought and sold for cash only.

Insurance by Trade Unions. R. S. O., 1897, Cap. 203.

Where a friendly society registered under this Act has its head office elsewhere than in the Province of Ontario, the Grand or other Provincial body, or the Lodges situated in the Province may file with the Insurance Registrar, an application for Provincial incorporation, setting forth the facts of the case, and the proposed corporate name and head office, and the purpose and rules of the society; also the names of those persons who are to be its first trustees, and stating the mode in which their successors are to be elected; also furnishing such other information as the Registrar requires.

Upon due application made the Registrar may name a day for the hearing of the application, and such public hearing of the application shall be given in The Ontario Gazette, and otherwise, as the Registrar directs.

If, upon the hearing, it appears to the Registrar that such incorporation ought to be granted, he shall have authority to certify in duplicate, or in as many parts as may be required, under his hand and the seal of his office, that he finds entitled to incorporation under the name and for the purposes specifid in the certificate, the persons mentioned therein.

One of the original parts of the certificate shall be filed in the office of the Provincial Registrar, together with such other documents as the Insurance Registrar by his certificates requires to be filed ; and from the day of such filing the persons mentioned in the Insurance Registrar's certificate and their associates and successors shall henceforth be a body corporate and politic, and shall have the powers, rights and immunities vested by law in such bodies.

Upon due application the Insurance Registrar shall have authority to admit to registry as a friendly society the body so incorporated.

Upon like proceedings taken as enacted in the first section under this Act incorporation may be granted in either of the two following cases :

Where any trade or labor union, or trade or labor organization, purposes to undertake contracts with its own members exclusively, for any of the insurance benefits enumerated in and permitted by clause 3 of section 62, or contracts to furnish tools or to pay unemployed or superannuation benefits to the said members.

Where any organization of persons resident in Ontario, consisting of not less than twenty-five members and managed and operated as a friendly society under rules conforming to this Act purposes to contract with its own members exclusively for sick benefits, not exceeding five dollars a week and a funeral benefit of not more than one hundred dollars, or either of such benefit.

The body so incorporated may upon due application, be admitted to register as a friendly society ; but unless and until so registered, the corporation, shall not undertake, nor agree to offer to undertake, any contract insuring the said or other insurance benefits.

Where any society, association, union, organization or lodge already incorporated under a prior Act of this Province becomes incorporated under this Act, such prior incorporation shall be deemed to have been merged in and superceded by the said latter incorporation.

In addition to friendly societies standing duly registered as such, at the passing of this Act, the following shall be admissable to registry on the Friendly Societies Register :

Societies incorporated from time to time by virtue of sections 33, 34, 36, 37 and 38 of this Act ;

Any corporation not provided for elsewhere herein which has by virtue of an Act of the Parliament of Canada, an insurance and provident society or association, or an insurance or guarantee fund in connection with the corporation, may upon due application for registry under this Act, be registered on the Friendly Society Register.

Provided that where any *bona fide* trade union or labor organization provides by its constitution, by-laws or rules for the assistance, relief or support of its members, the Registrar may, by writing, under his hand and the seal of his office, declare the organization exempt from the operation of this Act ; and such certificate shall remain valid until by like writing revoked ; and the organization so exempted shall not be subjected to any penalty imposed by this Act ;

Any corporation in Ontario which at the passing of this Act has under authority of an Act of Canada created a fund for paying a gratuity on the happening of death, sickness, infirmity, casualty, accident, disability or any

change of physical or mental condition, shall, upon due application for registry hereunder, be entitled to be registered on the Friendly Society Register:

Any association of the civil servants or employees of the Dominion of Canada incorporated by virtue of an Act of the Parliament of Canada, may, upon due application, be admitted to registry.

Railway Companies—By-laws Affecting Employees. R.S.O. 1897, Cap. 207

Every railway company shall make such by-laws, rules and regulations to be observed by the conductors, engine-drivers and other officers and servants of the company and by all other persons and companies using the railway of such company, and such regulations with regard to the construction of the carriages and other vehicles, to be used in the trains of the railway of the company, as are requisite for the perfect carrying into effect of the provisions of this part of this Act and the orders and regulations of the Lieutenant-Governor-in-Council.

Any railway company, may, by a by-law, impose upon any officer, servant or person who, before the contravention of such by-law has had notice thereof, and is employed by the company, a forfeiture to the company of not more than thirty days' pay of such officer or servant, for any contravention of such by-law, and may retain such forfeiture out of the salary or wages of the offender.

The notice of the by-law, or of any order or notice of the commissioner of Public Works, may be proved by proving the delivery of a copy thereof to the officer, servant or person, or that he signed the copy thereof, or that a copy thereof was posted in some place where his work or his duties, or some of them were to be performed.

Such proof, with evidence of the contravention, shall be a defence to the company in any action for the recovery from it of the amount so retained. The Electric Railway Act, R.S.O., 1897, cap. 209, contains four sections (137-140) exactly similar in terms to the above.

Street Railways—Lien for Wages. R.S.O., 1897, Cap. 208.

Every mechanic, laborer or other person who performs labor for wages upon the construction or maintenance of the railway or the works connected therewith, shall have upon the said railway and other property of the company a lien for such wages not exceeding the wages for thirty days, and the said lien may be enforced in the manner provided for enforcing liens for wages by the Mechanics' and Wage-earners' Lien Act.

Immigration Aid Societies. R.S.O., 1897, Cap. 212.

The Minister of Agriculture shall from time to time divide the Province of Ontario into immigration districts, either by counties, ridings, municipalities, as seems to him most expedient; and in each of such districts there shall be an immigration office and an immigration agent; and such division and any future alteration thereof, shall be notified in The Ontario Gazette as the immigration disrtict of the place where the immigration office is kept.

In each of such districts an Immigration Aid Society may be formed and constituted under this Act, for the purpose of assisting immigrants to reach Ontario from Europe and elsewhere; and of obtaining employment for them on their arrival in the Province: and of enabling persons in the Province in want of laborers, artizans or servants to obtain them by such immigration; for every

such society shall consist of not less than twenty-five persons, whether resident or not in the immigration district agreeing to form such society and to subscribe among them, as the capital of the society, not less than 500.00, in fifty shares of $10.00 each, one-fourth of which, at least, shall be paid on subscribing the declaration of membership into the hands of a person agreed upon as their secretary-treasurer, by the persons present at the meeting at which it is agreed to form the society.

The Act also provides for the regulation and control of such societies under the inspection of a district agent, to be appointed by the Minister of Agriculture. Such societies have power to make loans to immigrants, and provision is made for their inspection by the Minister of Agriculture.

An Act Respecting Municipal Matters. R.S.O., 1897, Cap. 223.

This Act provides that the hours for the nomination of candidates for the offices of aldermen in cities may, by by-law be fixed at half-past seven o'clock in the evening, and for polling from nine in the morning until seven o'clock in the evening. This latter provision applies only to cities of 100,000 inhabitants and over. A by-law to extend the time of holding the election until seven o'clock in the evening must be passed before the fifteenth day of November of the year in which such by-law is to take effect. In all other cases the polls shall be opened at nine o'clock in the morning, and shall continue open till five in the afternoon and no longer.

Powers of Police Commissioners as to Livery Stables, etc.

The Board of Commissioners of Police shall, in cities, license and regulate second-hand shops and junk stores, and the owners of livery stables and of horses, cabs, carriages, carts, trucks, sleighs, omnibuses and other vehicles regularly used for hire within the said city and shall establish the rates of fare to be taken by the owners or drivers of such vehicles for the conveyance of goods or passengers from any point within the city to any point not more than three miles beyond the limits of such city, and may provide for enforcing such rates.

The Board of Commissioners of Police in any city may pass by-laws defining areas or districts in the city within the limits of which no livery stable, sale, or boarding stable in which horses are to be kept for hire or for express purposes shall be established or maintained.

The Board of, etc., in any city shall pass by-laws regulating the hours of labor of persons employed in livery or boarding stables, or as drivers of cabs, carriages or sleighs kept for hire within the city, and also the hours of labor of persons employed by owners of horses, carts, etc., kept for hire within the city, and for licensing drivers of cabs within the said city.

The Board, etc., shall also regulate and control children engaged as:

(a) Express or despatch messengers;

(b) Vendors of newspapers and small wares;

(b) Bootblacks.

The Board in any city, and the Council in any town, may regulate and prohibit the playing of bands and of musical instruments on any street, highway, park or public place in the city, but this shall not apply to any military band attached to any corps of the militia of Canada when on duty under command of its regular officer.

Protection of Workmen and Others on Buildings.

By-laws may be passed by the councils of municipalities, townships, cities, towns and villages for inspecting and regulating the construction and erection of hoists, scaffolding and other constructions used in erecting, repairing, altering or improving buildings, chimneys or other structures; and for making all necessary regulations for the protection and safety of workmen and other persons employed thereon; and for appointing inspectors of scaffolding.

Egress from and Construction of Buildings.

By-laws may be passed as above for regulating the number of doors on churches, theatres, halls or other buildings used for worship, public meetings or places of amusement, and the street gates leading thereto; and the construction and width of stairways, in churches, etc., and in factories, warehouses, hotels and boarding houses; and also the size and number of doors and other means of egress from all hospitals, schools, colleges and other buildings of a like nature, and also the structure of stairs and railings in all such buildings and the strength of beams, walls, and joists and their supports, and for compelling the production of plans for inspection and for enforcing the observance of such regulations.

For preventing the obstruction of the halls, aisles, passage-ways, etc., in any such buildings or leading thereto during the occupation of the same by any public assemblage.

Hoists and Elevators.

For licensing and inspecting elevators and hoists for passengers or freight, used by the public or by employees, and for imposing and enforcing penalties for the infringement of such by-laws, and for prohibiting and preventing the use of elevators and hoists contrary to the provisions of such by-law. But the provisions in this clause contained shall be subject to the Ontario Factories Act and of any other Act making provisions applicable to elevators and hoists.

By the Councils of Cities, Towns and Villages.

For regulating the construction of cranes, hoists and elevators, and for determining the manner in which elevators in buildings shall be constructed and worked, and for providing for the inspection of all cranes, etc., but none of the provisions of such by-laws shall be inconsistent with the Ontario Factories Act so far as the same provides for the regulation or construction of cranes, etc.

Cab Stands and Booths.

By-laws may be passed by the councils of cities, etc. for authorizing and assigning stands for vehicles kept for hire on the public streets and places; and for the erection and maintenance of covered stands for booths on streets, etc., and for the protection or shelter of the drivers of such vehicles. Provided that no such booth shall be placed upon any sidewalk without the previous consent of the owner or lessee of the property fronting or adjoining such stand or booth.

By-laws may be passed by the councils of cities, etc., for building, equipping and maintaining and operating street railways in, along and over such streets of the city or town and subject to and upon such terms as the Lieutenant-Governor-in-Council may approve; and for leasing the same from time to

time on such terms as may be determined on; and for levying an annual special rate to defray the yearly interest on the expenditure therefor, and to form a yearly sinking fund for the payment of the principal within a time not exceeding thirty years.

A municipal corporation which builds, constructs, owns or manages a street railway shall have and exercise the same rights and powers and be subject to the same liabilities as street railways and companies under the Street Railway Act, except where the same conflict with or are repugnant to the rights, powers, liabilities or duties of a municipal corporation as provided by law.

Electric Street Railways.

By-laws may be passed by the councils of cities for compelling every electric railway company, operating its railway within the limits of such city, to provide proper and sufficient enclosed vestibules upon its street car to protect the motormen and persons in charge of such cars, from exposure to cold, snow, rain or sleet, during the months of November, December January, February and March in every year, while engaged in operating the cars.

Schools for Artisans.

By-laws may be passed by the councils of municipalities, counties, cities and towns for establishing schools for the training and education of artisans, mechanics and workmen in such subjects as may promote a knowledge of mechanical and manufacturing arts, and for acquiring such real property as may be requisite for such schools; and the erection and maintenance of suitable buildings thereon; and for improving and repairing such school buildings, and for disposing of such property when no longer required. Councils establishing such schools may appoint Boards of trustees to conduct the schools, giving them such authority as the councils may deem expedient.

For making grants in aid of such schools, or to art schools, approved by the Department of Education, as they may deem expedient.

AN AMENDMENT TO THE MUNICIPAL ACT OF 1900.

Provides that in cities having a population of more than 15,000 the council may, by by-law, provide that the aldermen shall be elected by a general vote of the electors, and either by general vote, or in two electoral divisions with a population exceeding 40,000, one-half the number to be elected by each division, but such by-law shall not come into force until it has been first submitted to a vote of the electors, and the persons entitled to vote on such by-law shall be the persons entitled to vote at municipal elections. Upon a petition being presented by 400 of the electors, it shall be submitted at the next municipal election following, and such by-law being carried by a majority of the electors voting thereon, shall come into effect at the next annual municipal election.

SECTION 24, MUNICIPAL AMENDMENT ACT, 1905.

Requires owners, contractors or master workmen, engaged in the erection or construction of building or public works to provide closet accommodation in connection with such building and public works.

Such a by-law may be repealed by a by-law to be submitted to the electors at any annual municipal election held not later than five years after its first coming into effect The repealing by-law to be submitted to a vote of the

municipal electors after being petitioned for by at least 400 of such electors. Where such vote has not been in favor of the election of mayor and aldermen by a general vote of the electors, and not by ward, a by-law bringing the Act into force may be passed by the council of the municipality before the first day of July next, without submitting the same to a vote of the municipal electors.

PUBLIC MEETINGS, R. S. O. 1897, CAP. 230.

The notice to be issued by the sheriff of any county, or by the mayor of any city or town, or by two or more justices of the peace, for calling any public meeting, shall be issued at least three days before the day on which such meeting is appointed to be held, and shall set forth the names of the requisitionists, or of a competent number of them. Also that the meeting is called within conformity of the provisions of this Act, and that such meeting and all persons attending the same, will be within the protection of this Act, and that all persons are required to take notice and govern themselves accordingly.

Every person required by law, or who has in the usual way been appointed at such meeting to preside over the same, shall cause order to be kept at such meetings, and shall commence the proceedings of the meeting by causing the summons or notice calling the meeting, or the declaration whereby the same is declared to be a public meeting, under the protection of this Act, to be publicly read. The person who presides over such public meeting shall cause any person who attemps to interrupt or disturb such meeting to be removed to such a distance from the same as may effectually prevent such interruption or disturbance, and may adjudge any person who makes such an attempt guilty of such attempted disturbance, upon which conviction any justice of the peace may, by warrant under his own hand, forthwith commit such person to the common gaol of the county or district, for any period not exceeding forty-eight hours from the time of commitment signed, and until the lawful costs of the constable and gaoler for the arrest, transmission and detention of such person are paid or satisfied.

Every action to be brought against any person for anything by him done under authority of this Act, must be brought within twelve months next after the cause of such action accrued.

THE ONTARIO FACTORIES ACT.

Revised Statutes of Ontario 1897, Chap. 256, as amended to 1904.

AN ACT FOR THE PROTECTION OF PERSONS EMPLOYED IN FACTORIES.

1. This Act may be cited as "The Ontario Factories Act." R.S O. 1887, c. 208, s. 1.

2. Where the words following occur in this Act they shall be construed in the manner hereinafter mentioned, unless a contrary intention appears:

1. "Factory" shall mean:

(*a*) Any building, workshop, structure or premises of the description mentioned in Schedule A to this Act, together with such other building, structure or premises as the Lieutenant-Governor in Council from time to time adds to the said Schedule; and the Lieutenant-Governor in Council may, from time to time, by proclamation published in the Ontario Gazette, add to or remove from the said schedule such description of premises as he deems necessary or proper;

(*b*) Any premises, building, workshop, structure, room or place wherein or within the precincts of which steam, water, or other mechanical power is used to move or work any machinery employed in preparing, manufacturing, or finishing, or in any process incidental to the preparing, manufacturing, or finishing of any article, substance, material, fabric or compound, or is used to aid the manufacturing process carried on there ;

(*c*) Any premises, building, workshop, structure, room or place wherein the employer of the persons working there has the right of access and control, and in which, or within, the precincts of which any manual labor is exercised by way of trade or for purposes of gain in or incidental to the following purposes, or any of them, that is to say : the making of any article or part of any article ; the altering, repairing, ornamenting or finishing of any article ; or, the adapting for sale of any article ;

Provided that where not more than five persons are employed in any place coming within the foregoing definition of a factory, and that where children, young girls or women are employed at home, that is to say in a private house, place or room, used as a dwelling, wherein neither steam, water nor other mechanical power is used in aid of the manufacturing process carried on there, and wherein the only persons employed are members of the same family dwelling there, the provisions of this Act shall not apply.

A part of a factory may, for the purposes of this Act, be taken to be a separate factory ; and a place used as a dwelling shall not be deemed to form part of a factory for the purposes of this Act.

Where a place situate within the close or precincts forming a factory is solely used for some purpose other than the manufacturing process or handicraft carried on in the factory, such place shall not be deemed to form part of that factory for the purposes of this Act, but shall, if otherwise it would be a factory, be deemed to be a separate factory, and be regulated accordingly.

Any premises or place shall not be excluded from the definition of a factory by reason only that such premises or place are or is in the open air. R.S.O. 1887, c. 208, s. 2, (1) ; 52 V. c. 43, s. 3 (1-2).

Where any owner, occupier or tenant of any premises, building, workshop, structure, room or place, who has the right of access thereto, and control thereof, lets or hires out or contracts for work or labor to be done therein by any other person, and such other person engages or employs therein any workman, child, young girl, or woman, in or for the carrying out or performing of such work or labor, or any part thereof, every such workman, child, young girl or woman shall, for all the purposes of this Act, be considered and taken as being in the service and employment of said owner, tenant, or occupier, and in computing the number of persons employed in any place in order to ascertain if such place comes within the definition of a factory according to the meaning and intent of this Act, every such workman, child young girl or woman shall be taken into account. 52 V. c. 43, s. 3 (4).

2. "Inspector" shall mean any one of the inspectors appointed by order of the Lieutenant-Governor in Council under the authority and for enforcing the provisions of this Act. 2 Edw. VII., c. 36, s. 2 (2).

3. "Employer" shall mean any person who in his own behalf, or as the manager, superintendent, overseer or agent or any person, firm, company or corporation, has charge of any factory and employs persons therein.

4. "Week" shall mean the period between midnight on Sunday night and midnight on the succeeding Saturday night.

5. "Child" shall mean a person under the age of fourteen years.

6. "Young girl" shall mean a girl of the age of fourteen years, and under the age of eighteen years.

7. "Woman" shall mean a woman of eighteen years of age and upwards.

8. "Parent" shall mean a parent or guardian of, or a person having the legal custody of, or the control over, or having direct benefit from the wages of a child or young girl.

9. "Court of summary jurisdiction" shall mean the Justice of the Peace or Police Magistrate, as the case may be, to whom jurisdiction is given by this Act to hear and determine prosecutions under this Act.

10. "Mill-gearing" shall comprehend every shaft, whether upright, oblique or horizontal, and every wheel, drum or pulley, by which the motion of the first moving power is communicated to any machine appertaining to a manufacturing process. R.S.O. 1887, c. 208, s. 2 (2-10); 52 V. c. 43, s. 2.

3. No child shall be employed in any factory, except in the business of canning or desiccating fruits and vegetables, and the work incidental thereto, as provided for in section 5 of this Act. 58 V. c. 50, s. 2.

4. The Lieutenant-Governor in Council may from time to time by Order in Council, notice of which shall be published in The Ontario Gazette, prohibit the employment of girls under the age of eighteen, and the boys under the age of sixteen in factories, the work in which is deemed by the Lieutenant-Governor in Council to be dangerous or unwholesome. 58 V. c. 50, s. 12.

5. Boys and girls under fourteen years of age may be employed during the months of June, July, August, September and October in any year in such gathering in and other preparation of fruits or vegetables for canning or desiccating purposes, as may be required to be done prior to the operation of cooking or other process of that nature requisite in connection with the canning or desiccating of fruits and vegetables. The place, room or apartment in which such boys or girls may be so employed shall be separate from any other wherein the cooking or other process aforesaid, or the canning or desiccating of said fruits or vegetables is carried on. R.S.O. 1887, c. 208, s. 6 (6); 52 V. c. 43, s. 4 (2-3); 4 Edw. VII. c. 26, s. 6.

6. (1) If a person is found in a factory, except at meal times or while all the machinery of the factory is stopped, or for the sole purpose of bringing food to the persons employed in the factory, such person shall, until the contrary is proved, be deemed for the purposes of this Act to have been then employed in the factory.

(2) Yards, playgrounds and places open to the public view, waiting rooms, and other rooms belonging to the factory in which no machinery is used or manufacturing process carried on, shall not be taken to be any part of the factory within the meaning of this section.

(3) Where a child or young girl is, in the opinion of the court, apparently of the age alleged by the informant, it shall lie on the defendant to prove that the child or young girl is not of that age. R.S.O. 1887, c. 208, s. 3.

7. A child, young girl or woman who works in a factory, whether for wages or not, either in a manufacturing process or handicraft, or in cleaning any part of the factory used for any manufacturing process or handicraft, or in cleaning or oiling any part of the machinery, or in any other kind of work whatsoever incidental to or connected with the manufacturing process or handicraft, or connected with the article made, or otherwise the subject of the manufacturing process or handicraft therein shall, save as is otherwise provided by this Act, be deemed to be employed in such factory within the meaning of this Act, and for the purpose of this Act an apprentice shall be deemed to work for hire. R.S.O. 1887, c. 208, s. 4.

(1) Young girls and women in factories shall, during working hours, wear their hair rolled or plaited and fastened securely to their heads, or confined in a close-fitting cap or net, so as to avoid contact with working machinery or

shafting or material being handled. It shall be the duty of managers, superintendents, foremen and others in charge to see that employees are fully notified of the provisions of this section. 4 Edw. VII., c. 26, s. 1.

8. It shall not be lawful to employ in a factory any child. young girl or woman so that the health of such child, young girl or woman is likely to be permanently injured, and whoever so employs any child, young girl or woman shall, upon summary conviction thereof, incur and be liable to imprisonment in the common gaol of the county wherein the offence has been committed, for a period not exceeding six months, or to a fine of not more than $100, with costs of prosecution, and in default of immediate payment of such fine and coss then to imprisonment as aforesaid. R.S.O. 1887, c. 208, s. 5.

9. To employ in a factory any child or any young girl or woman shall be deemed to be not lawful, and so that the health of such child, young girl or woman is likely to be permanently injured, if in that factory there is any contravention of the following provisions of this section, that is to say:

1. It shall not be lawful for a child, young girl or woman to be employed for more than ten hours in one day, nor more than sixty hours in any one week, unless a different apportionment of the hours of labor per day has been made for the sole purpose of giving a shorter day's work on Saturday.

The hours of working in any one day shall not be later than half past six o'clock in the evening, unless a special permit in writing is obtained from the Factories Inspector. 4 Edw. VII., c. 26, s. 2.

2. In every factory the employer shall allow every child and every young girl and woman therein employed not less than one hour at noon of each day for meals, but such hour shall not be counted as part of the time herein limited as respects the employment of children, young girls and women.

3. If the Inspector so directs in writing, the employer shall not allow any child, young girl or woman to take meals in any room wherein any manufacturing process is then being carried on. And if the inspector so directs in writing the employer shall, at his own expense, provide a suitable room or place in the factory, or in connection therewith, for the purposes of a dining and eating room for persons employed in the factory. R.S.O. 1887, c. 208, s. 6 (3-5).

10.—(1) Notwithstanding anything contained in this Act, women may, during the months of July, August, September and October in any year, be employed to a later hour than nine o'clock in the afternoon of any day in any factory wherein the only work or operations carried on relate to and are exclusively such as may be necessary for the canning or desiccating of fruits or vegetables, and the preparation thereof for being so canned or desiccated; but no woman shall be so employed during the said months to a later hour than nine o'clock in the afternoon of any day for more than twenty days in the whole, and in reckoning such period of twenty days, every day on which any woman has been so employed to a later hour than nine o'clock in the afternoon shall be taken into account.

(2) Where under the provisions of this section, any woman is employed on any day to a later hour than seven o'clock in the afternoon, she shall, on every such day and in addition to the hour for the noon-day meal provided for by section 9 of this Act, be allowed not less than forty-five minutes for another or evening meal between five and eight of the clock in the afternoon 52 V. c. 43, s. 10.

11.—(1) Subject to any regulations which may be made in that behalf by the Lieutenant-Governor in Council, it shall be lawful for the Inspector on due proof to his satisfaction of such accident, occurrence, custom or exigency of trade, to give permission for such exemption from the observance of the foregoing provisions of the Act as will, in his judgment, fairly and equitably to the

proprietors of and to the women, young girls and children in such factory, make up for any loss of labour from any such accident or occurrence, or meet the requirements of such custom or exigency of trade;

(*a*) Where any accident which prevents the working of any factory happens to the motive power of any machinery; or

(*b*) Where from any other occurence beyond the control of the employer, the machinery, or any part of the machinery, of any factory cannot be regularly worked; or

(*c*) Where the customs or exigencies of certain trades require that the children, young girls or women working in a factory, or in certain processes in a factory, shall be employed for a longer period than as herein above provided.

(2) In the case of the inspector permitting such exemption,

(*a*) No woman, young girl or child shall be employed before the hour of six o'clock in the morning and after the hour of nine o'clock in the evening; and

(*b*) The hours of labor for women, young girls and children shall not be more than twelve and a half in any one day, nor more than seventy-two and a half in any one week, and

(*c*) Such exemption shall not comprise more than thirty-six days, in the whole, in any twelve months; and in reckoning such period of thirty-six days, every day on which any child, young girl or woman has been employed overtime shall be taken into account; and

(*d*) During the continuance of such exemption there shall, in addition to the hour for the noon-day meal provided for by section 9 of this Act, be allowed to every woman, young girl or child so employed in the factory on any day to an hour later than seven of the clock in the afternoon, not less than forty-five minutes for another or evening meal between five and eight of the clock in the afternoon; and

(*e*) In every factory to, or with respect to, which any such permission for exemption is so given, there shall, in compliance with the provisions of section 34 of this Act, be affixed a notice specifying the extent and particulars of such exemption. R.S.O. 1887, c. 208, s. 8; 52 V. 43 ss. 5 and 6, or woman is employed in any factory on any day for a longer period than is by the employer in a register, which shall be in such form as may be required by any regulations made in that behalf by the Lieutenant-Governor in Council. R.S.O. 1887, c. 208, s. 9.

12. When under the exemptions allowed herein any child, young girl or woman is employed in any factory on any day for a longer period than is allowed herein, the duration of such employment shall be duly recorded by the employer in a register, which shall be in such form as may be required by any regulations made in that behalf by the Lieutenant-Governor in Council. R.S.O. 1887, c. 208, s. 9.

13. Notice of the hours between which children, young girls or women are to be employed shall be made in such forms as may be required by the regulations made in that behalf by the Lieutenant-Governor in Council, and shall be signed by the inspector and by the employer, and shall be hung up during the period affected by such notice in such conspicuous place or places in the factory as the inspector requires. R.S.O. 1887, c. 208, s. 10.

14.—(1) A child shall not be allowed to clean any part of the machinery in a factory while the same is in motion by the aid of steam, water or other mechanical power.

(2) A young girl or woman shall not be allowed to clean such part of the machinery in a factory as in mill-gearing, while the same is in motion for the purpose of propelling any part of the manufacturing machinery.

(3) A child or young girl shall not be allowed to work between the fixed and traversing part of any self acting machine while the machine is in motion by the action of steam, water, or other machinery power.

(4) A child, young girl or woman allowed by an employer to clean or work in contravention of this section, shall be deemed to be employed by him contrary to the provisions of this Act, and to have contravened said provisions. R.S.O. 1887, c. 208, s. 7.

15.—(1) (*a*) The owner of every factory shall provide a sufficient number and description of privies, earth or water-closets and urinals for the employees of such factory, including separate sets for the use of male and female employees, and shall have separate approaches to the same, the recognized standard being one closet for every 25 persons employed in the factory.

(*b*) The owners of every factory shall be held responsible for the remedying of any effluvia arising from any drain, or defective plumbing, and for any repairs required to keep the building in a safe and habitable condition.

(*c*) The owner of every factory shall arrange for a supply of pure drinking water available for each tenant in the factory.

(2) The owner of every factory who for thirty days refuses or neglects to comply with the above requirements or conditions, after being notified in writing in regard to the same by the Factories Inspector, shall, because thereof, be deemed to be guilty of a contravention of the provisions of this Act. 4 Edw. VII., c. 26, s. 3.

16.—(1) (*a*) The employer of every factory shall keep the factory in a clean and sanitary condition, and free from any effluvia arising from refuse of any kind.

(*b*) The employer of every factory shall keep privies, earth or water-closets and urinals in good repairs and in a sanitary condition, and shall be held responsible for keeping closets separated for male and female employees.

(*c*) The employer of every factory shall heat each compartment used by him and regulate the temperatures so as not to be injurious to the health and comfort of the employees, and to be consistent with the work performed therein, but in no case shall the temperature be less than 60 degrees Fahrenheit unless specially authorized by the Inspector in writing.

(*d*) The employer of every factory shall be held reponsible for ventilating the factory in such a manner as to keep the air reasonably pure, and so as to render harmless, as far as reasonable practicable, all gases, vapors, dust or other impurities generated in the course of the manufacturing process or handicraft carried on therein that may be injurious to the health.

(*e*) The employer of every factory shall not allow overcrowding while work is carried on therein, so as to be injurious to the health of the persons employed therein, the standard to be allowed being 300 cubic feet of room space for each employee.

(*f*) The Inspector of Factories shall have power in his discretion to require the employer to provide a sufficient number of spittoons and place the same in different parts of the factory, and keep the same clean.

(*g*) In every factory where any process is carried on by which dust is generated and inhaled by the workers to an injurious extent if such inhalation can by mechanical means be prevented or partially prevented, the inspector may, subject to such regulations, if any, as may be made in that behalf, direct that such means shall be provided within a reasonable time by the employer who in such case shall be bound so as to provide them.

(*h*) The employer of every factory shall provide a supply of wholesome drinking water and proper drinking cups for employees, which must be at least eight feet distant from water-closets and urinals.

(2) Where grinding, polishing or buffing is carried on in any shop the preceding clause (*g*) shall apply irrespective of the number of persons employed herein.

(3) The employer of every factory who for thirty days refuses or neglects to comply with the above requirements or conditions after being notified in writing in regard to the same by the Factories Inspector shall be deemed to be guilty of a contravention of the provisions of this Act. 4 Edw. VII., c. 26, s. 4.

17. Where two or more persons occupy or use the same room or premises for carrying on any work or business within the meaning of this Act, and employ in the aggregate six persons or more, no one of such persons employing so many as six, each of the several employers shall be held responsible for providing proper and sufficient water-closets, and the other requirements set forth in sections 15 and 16 of this Act; which said sections shall apply to each and every of such employers as if they were partners in all the work of business of the said room or premises. 58 V. c. 50, s. 4.

18. The inspector may, for the purposes of the next preceding three sections, take with him into any factory a physician, health officer, or other officer of the local sanitary authority. R.S.O. 1887, c. 208, s. 13.

19. It shall not be lawful to keep a factory so that the safety of any person employed therein is endangered, or so that the health of any person employed therein is likely to be permanently injured, and whoever so keeps a factory shall, upon conviction thereof, incur and be liable to imprisonment within the common gaol of the county within which the offence was committed, for a period of not more than twelve months, or to a fine of not more than $600 with costs of prosecution, and in default of immediate payment of such fine and costs, then to imprisonment as aforesaid. R. S. O. 1887, c. 208, s. 14.

(*a*) It shall not be lawful to have a bedroom or sleeping place on the same floor of a building as a shop, bake house or factory, nor to have a bedroom or sleeping place in the same building as a shop, bakehouse or factory without the written consent of the inspector.

(*b*) It shall not be lawful to have a stable under the same roof as a factory, unless there is between the stable and factory a sufficient brick or other partition wall, approved by the inspector, separating the one from the other. 3 Edw. VII., c. 7, s. 45.

20.—(1) In every factory,

(*a*) All dangerous parts of mill gearing, machinary, vats, pans, caldrons, reservoirs, wheel-races, flumes, water channels, doors, openings in the floors or walls, bridges, and all other like dangerous structures or places shall be as far as practicable securely guarded. 58 V., c. 50, s. 3.

(*b*) No machinery other than steam engines shall be cleaned while in motion if the inspector so directs by written notice.

(*c*) The openings of every hoistway, hatchway and well-hole used for power elevators shall be at each floor, including the basement, provided with and protected by good and sufficient trap doors or self closing hatches, or by gates closing automatically, which gates shall not be less than five feet six inches high, and may be in sections, if desired. The sides of the shaft on all floors, including basement, not guarded by gates, shall be protected by enclosures at least six feet high, approved by the inspector. Where the elevator is enclosed in a tower having walls over six inches thick, it may be provided with an extra operating rope outside the tower. In every case the elevator must be provided with lock to secure the operating rope. In case of elevators operated by hand power the gates must not be less than three feet in height and must be automatic

closing gates, and the sides not protected by gates must be protected by enclosures not less than four feet in height, approved by the inspector. A clearly painted sign marked "Dangerous," having letters not less than four inches in height, must be affixed or stencilled on the bottom rail of every gate, where it will be plainly visible from the outside. The top of every elevator platform shall be provided with a sufficient guard to protect the occupants, approved by the inspector. 4 Edw. VII., c. 26, s. 5.

(*d*) All elevator cabs or cars, whether used for freight or passengers, shall be provided with some suitable mechanical device to be approved by the inspector, whereby the cab or car will be securely held in the event of accident to the shipper, rope or hoisting machinery, or from any similar cause. R. S. O., 1887, c. 208, s. 15 (2-4).

(*e*) Any other particulars which any inspector from time to time considers dangerous, and in regard to which he gives notice to that effect to the employer, shall likewise as far as practicable, be secured or securely guarded. 58 V., c. 50, s. 6.

(*f*) Inflammable material, such as coal oil or petroleum, benzine and naphtha, and explosives of all kinds, shall be kept stored when not in actual use in a building separated from the other parts of the factory, or in a fireproof compartment of the factory approved of by the inspector. 1 Edw. VII., c. 35, s. 2.

(*g*) No boiler shall be used that is not insured in some boiler inspection company duly authorized in the Province for that purpose, or that has not been inspected within one year by a competent inspector, such inspector to be a man who has had charge of a boiler and engine for a period of not less than five years, or who holds a certificate as a stationary engineer, and the manager or proprietor shall, whenever so requested by the inspector, produce for examination the insurance policy or the certificate of inspection. 1 Edw. VII., c. 35, s. 2,

(2) A factory in which there is a contravention of this section or of the regulations made for the enforcement of this section, shall be deemed to be kept unlawfully, and so that the safety of any person employed therein is endangered. R. S. O., 1887, c. 208, s. 15, *last part*

21.—(1) In every factory,

(*a*) There shall be such means of extinguishing fire as the inspector, acting under the regulations made in that behalf, directs in writing:

(*b*) The main inside and outside doors shall open outwardly, and any door leading to or being the principal or main entrance to the factory or to any tower stairways, or fire-escapes therein, or belonging thereto, shall not be bolted, barred, or locked at any time during the ordinary and usual working hours in the factory. R. S. O., 1887, c. 208, s. 16 (1, 2).

(2) The owner of every factory over two stories in height, and where deemed necessary by the inspector, the owner of every factory over one storey in height, shall within six months of the time of passing of this Act, provide the said factory with one or more systems of fire escapes as follows, and shall keep the same in good repair:

(*a*) A sufficient number of tower stairways with iron doorways within reach of or having easy communication with all the working rooms of the factory; or

(*b*) A sufficient number of iron or other uninflammable fire escapes on the outside of the building, such fire escapes to consist of stairways with railing or in case the special approval of the inspector is given in writing then of iron ladders, and every such stairway or ladder shall be connected with the interior of the building by iron or tinned doors or windows with iron shutters, and to have suitable landings at every storey, including the attic, if the attic is occupied

as a workroom, and the said stairways to start at a distance of not more than eight feet from the ground or pavement; or to be

(*c*) Any other system of fire escape that may be sanctioned under this Act by the Lieutenant-Governor in Council on the recommendation of the Factories Inspector.

(3) The owner or proprietor of any factory refusing or neglecting to provide the means of safe exit in case of fire prescribed in this section shall upon conviction thereof incur and be liable to a fine of not more than $500 with costs of prosecution, and in default of immediate payment of such fine and costs, be liable to imprisonment within the common gaol of the county for a period of not more than twelve months. 1 Edw. VII., c. 35, s. 3.

(4) A factory or workshop in which there is a contravention of this section shall be deemed to be kept unlawfully and so that the safety of any person employed therein is endangered. R. S. O., 1887, c. 208, s. 16 (3).

22. In case of a fire or accident in any factory occasioning any bodily injury to any person employed therein, whereby he is prevented from working for more than six days next after the fire or accident, a notice shall be sent to the inspector in writing by the employer forthwith after the expiration of the said six days, and if such notice is not so sent the employer shall be liable to a fine not exceeding $30. 58 V., c. 50, s. 7.

23. In case of an explosion occurring in the factory, whether any person is injured thereby or not, the fact of such explosion having occurred shall be reported to the inspector in writing by the employer within twenty-four hours next after the explosion takes place. And if such notice is not so sent, the employer shall be liable to a fine not exceeding $30. 58 V., c. 50, s. 8.

24. Where in a factory any person is killed from any cause, or is injured from any cause, in a manner likely to prove fatal, written notice of the accident shall be sent to the inspector within twenty-four hours after the occurrence thereof, and if such notice is not so sent, the employer shall be liable to a fine not exceeding $30 58 V., c. 50, s. 9.

25. Where in a factory the owner or hirer of a machine or implement moved by steam, water, or other mechanical power, in or about or in connection with which machine or implement children, young girls or women are employed, is some person other than the employer as defined by this Act, and such children, young girls or women are in the employment and pay of the owner or hirer of such machine or implement, in any such case such owner or hirer shall, so far as respects any offence against this Act, which may be committed in relation to such children, young girls or women, be deemed to be the employer. R.S.O 1897, c. 208, s. 20.

26.—(1) The provisions of this Act which relate,

(*a*) To the cleanliness or to the freedom from effluvia, or to the overcrowding or ventilation of a factory; and

(*b*) To children, young girls and women being during any part of the times allowed for meals in a factory employed in the factory or being allowed to remain in any room; and

(*c*) To the affixing of any notice or abstract in a factory or specifying any matter in the notice so affixed, save and except where such notice is a notice of the name and address of the inspector; and

(*d*) To the sending notice of accidents;

shall not apply where persons are employed at home, that is to say, to a private house, room, or place which, though used as a dwelling, might by reason of the work carried on there be a factory within the meaning of this Act, and in which neither steam, water nor other mechanical power is used,

and in which the only persons employed are members of the same family dwelling there.

(2) The provisions of this Act which relate,

(*a*) To children, young girls and women being during any part of the times allowed for meals in a factory, employed in a factory or being allowed to remain in any room ; and

(*b*) To the affixing of any notice or abstract in a factory or specifying any matter in the notice so affixed, save and except where such notice is a notice of the name and address of the inspector ;

shall not apply to a factory which is conducted on the system of not employing children or young girls therein, and the occupier of which has served on the inspector notice of his intention to conduct his factory upon that system.

(3) Where an employee has served on an inspector notice of his intention to conduct his factory on the system of not employing children or young girls therein, the factory shall be deemed for all the purposes of this Act to be conducted on the said system until the employer changes it, and no changes shall be made until the employer has served on the inspector notice of his intention to change the system, and until the change a child or young girl employed in a factory shall be deemed to be employed contrary to the provisions of this Act; a change in the said system shall not be made oftener than once in every three mouths, unless for special cause allowed in writing by the inspector 52 V. c. 43, s. 8.

27. Nothing in this Act shall extend to any person being a mechanic, artisan or labourer, working only in repairing either the machinery in, or any part of, a factory. R.S.O. 1887, c. 208, s. 23.

28. The Lieutenant-Governor in Council may from time to time, for the purposes of carrying out this Act—

1. Make such rules, regulations and orders for enforcing its provisions and for the conduct and duties of the inspector, as may be deemed necessary ;

2. Appoint the inspector who shall be paid such salary or compensation as from time to time may be appropriated for the purpose by the Legislature. 2 Edw. VII., c. 36, s. 3.

29. The Lieutenant-Governor in Council may from time to time appoint a female inspector for the purpose of carrying out this Act, in addition to the other Inspectors by the law directed. 58 V. c. 50 s. 10.

30.—(1) The inspector shall for the purposes of the execution of this Act, and for enforcing the regulations made under the authority thereof, have power to do all or any of the following things, namely.

(*a*) To enter, inspect and examine at all reasonable times by day or night any factory and any part thereof when he has reasonable cause to believe that any person is employed therein, and to enter by day any place which he has reasonable cause to believe to be a factory ;

(*b*) To require the production of any register, certificate, notice or document required by this Act to be kept, and to inspect, examine and copy the same.

(*c*) To take with him in either case a constable into a factory in which he has reasonable cause to apprehend any serious obstruction in the execution of his duty.

(*d*) To make such examination and enquiry as may be necessary to ascertain whether the provisions of this Act are complied with, so far as respects the factory and the persons employed therein ;

(*e*) To examine either alone or in the presence of any other person, as he thinks fit, with respect to matters under this Act, every person whom he finds in a factory or whom he has reasonable cause to believe to be, or to have been, within the two preceding months employed in a factory, and to require such person to be so examined, and to sign a declaration of the truth of the matters respecting which he is so examined ;

(*f*) For the purpose of any investigation, inquiry or examination made by him under the authority of this Act, to administer an oath to and to summon any person to give evidence ;

(*g*) To exercise such other powers as may be necessary for carrying this Act into effect.

(2) The employer and his agents and servants shall furnish the means required by the inspector as necessary for any entry, inspection, examination, inquiry, or the exercise of his powers under this Act in relation to such factory.

(3) Every person who wilfully delays the inspector in the exercise of any power under this section, or who fails to comply with a requisition or summons of the inspector in pursuance of this section, or to produce any certificate or document which he is required by or in pursuance of this Act to produce, or who conceals or prevents a child, young girl or woman from appearing before or being examined by the inspector, or attempts so to conceal or prevent a child, young girl or woman, shall be deemed to obstruct an inspector in the execution of his duties under this Act; but no one shall be required under this section to answer any question, or to give any evidence, tending to criminate himself.

(4) Where the inspector is obstructed in the execution of his duties under this Act, the person obstructing him shall be liable to a fine not exceeding $30 ; and where an inspector is so obstructed in a factory, the employer shall be liable to a fine not exceeding $30, or where the offence is committed at night $100. R.S.O. 1887, c. 208, s. 2.

31.—(1) The inspector, before entering, in pursuance of the powers conferred by this Act, without the consent of the occupier, any room or place actually used as a dwelling, as well as for a factory, shall on an affidavit or statutory declaration of facts and reasons, obtain written authority to do so from the Lieutenant-Governor in Council, or such warrant as is hereinafter mentioned, from a Justice of the Peace or Police Magistrate.

(2) The affidavit or statutory declaration above mentioned may be inspected or produced in evidence, in all respects the same as an information on oath before a Justice.

(3) A Justice of the Peace or Police Magistrate, if satisfied by information on oath, and there is reasonable cause to suppose that an enactment of this Act is contravened in any such room or place as aforesaid may, in his discretion, grant a warrant under his hand, authorizing the inspector named therein, at any time within the period named therein, but not exceeding one month from the date thereof, to enter, in pursuance of this Act, the room or place named in the warrant, and exercise therein the powers of inspection and examination conferred by this Act, and the fines and provisions of this Act, with respect to obstructions of the inspector, shall apply accordingly. R.S.O. 1887, c. 208, s. 26.

32. Every inspector under this Act shall be furnished with a formal certificate of his appointment, under the hand and seal of the Minister of Agriculture, or other member of the Executive Council to whom the duty of the administration of this Act may from time to time be assigned under *The Act respecting the Executive Council*, and on applying for admission to a factory shall, if required, produce to the employer the said certificate. R.S.O. 1887, c. 208, s. 27 ; 52 V. c. 43, s. 9.

33—(1) Every person shall, within one month after he begins to occupy a factory, serve on the inspector a written notice containing the name of the factory, the place where it is situated, the address to which he desires his letters to be addressed, the nature of the work, the nature and amount of the moving power therein, and the name of the firm under which the business of the factory is to be carried on, and in default shall be liable to a fine not exceeding $30.

(2) In every factory the employer shall keep in the form and with the particulars prescribed by any regulation made by the Lieutenant-Governor in Council in that behalf, a register of the women, young girls and children employed in that factory, and of their employment, and of other matters under this Act; and shall send to the inspector such extracts from any register kept in pursuance of this Act as the inspector from time to time requires for the execution of his duties under this Act, and in default thereof such employer shall be liable to a fine not exceeding $30 R.S.O. 1887, c. 208, s. 28,

34. There shall be affixed at the entrance of a factory and in such other parts thereof as the inspector directs, and be constantly kept so affixed in the form directed by the inspector and in such position as to be easily read by the persons employed in the factory—

1. Such notices of the provisions of this Act, and of any regulations made thereunder as the inspector deems necessary to enable the persons employed in the factory to become acquainted with their rights, liabilities and duties under this Act.

2. A notice of the names and address of the inspector;

3. A notice of the clock (if any) by which the period of employment and times for meals in the factory are regulated;

4. Every other notice and document (if any) required by this Act to be affixed in the factory.

In the event of a contravention of any provision or requirement of this section in a factory the employer shall be liable to a fine not exceeding $20. R.S.O. 1887, c. 208, s. 29. *See* sec. 11 (2*e*).

35. A notice of the name and address of the inspector shall, in compliance with such directions as the inspector may give under the provisions of section 34 of this Act, be affixed in every factory. 52 V. c. 43, s. 11.

36—(1) Any notice, order, requisition, summons and document under this Act may be in writing or print, or partly in writing or partly in print.

(2) Any notice, order, requisition, summons and document required, or authorized to be served or sent, for the purposes of this Act may be served and sent by delivering the same to or at the residence of the person on or to whom it is to be served or sent, or where that person is an employer, within the meaning of this Act, by delivering the same, or a true copy thereof, to his agent or to some person in the factory of which he is employer; it may also be served or sent by post by a pre-paid letter, and if served or sent by post shall be deemed to have been served and received respectively at the time when the letter containing the same would be delivered in the ordinary course of post, and in proving such service or sending it shall be sufficient to prove that it was properly addressed, and put into the post office, and where it is required to be served on or sent to an employer, it shall be deemed to be properly addressed, if addressed to him at the factory in respect of which he is employer, with the addition of the proper postal address, but without naming the person who is the employer. R.S.O. 1887, c. 208, s. 30.

37. Every person who wilfully makes a false entry in any register, notice, certificate or document required by this Act to be left or served, or sent, or who wilfully makes or signs a false declaration under this Act, or who knowingly makes use of any such false entry or declaration, shall upon conviction thereof,

be liable to imprisonment in the common gaol of the county wherin the offence was committed for a period not exceeding six months or to a fine of not more than $100, with costs of prosecution, and in default of immediate payment of such fine and costs, then to imprisonment as aforesaid. R.S.O. 1887, c. 208, s. 22.

38. The parent of any child or young girl employed in a factory in contravention of this Act shall, unless such employment is without the consent, connivance or wilful default of such parent, be guilty of an offence in contravention of this Act, and shall for each offence on summary conviction thereof incur and pay a fine of not more than $50 and costs of prosecution, and in default of immediate payment of such fine and costs shall be imprisoned in the common gaol of the county wherein the offence was committed for a period not exceeding three months. R.S.O. 1887, c. 208, s, 17.

39. If any of the provisions of this Act, or of any regulations, rules or orders made under the authority thereof by the Lieutenant-Governor in Council or by any inspector are contravened, and no other penalty is herein provided for such contravention, the employer guilty of such contravention, shall on summary conviction thereof incur and pay a fine of not more than $50 with costs of prosecution, and in default of immediate payment of such fine and costs shall be imprisoned in the common gaol of the county within which the offence was committed, for a period not exceeding three months. R.S.O. 1887, c. 208, s. 31.

40. If a factory is not kept in conformity with this Act, the Court of summary jurisdiction, in addition to, or instead of inflicting a fine, penalty or other punishment upon the employer, may order certain means to be adopted by the employer, within the time named in the order, for the purpose of brining his factory into conformity with this Act; the Court may also, upon application, enlarge the time so named, but if, after the expiration of the time as originally named or enlarged by subsequent order, the order is not complied with, the employer shall be liable to a fine not exceeding $10 for every day such non-compliance continues. R.S.O. 1887, c. 208, s. 32.

41. Where the employer is charged with an offence against this Act he shall be entitled, upon information duly laid by him, to have any other person whom he charges as the actual offender brought before the Court or tribunal at the time appointed for hearing the charge ; and if after the commission of the offence has been proved the employer proves to the satisfaction of the Court that he had used due diligence to enforce the execution of the Act, and that the said other person had committed the offence in question without the knowledge, consent or connivance of him the employer, the said other person shall be summarily convicted of such offence and the employer shall be exempt from any fine, penalty or punishment. R.S.O. 1887. c. 208, s. 33.

42. Where it is made to appear to the satisfaction of the inspector at the time of discovery the offence that the employer had used all due diligence to enforce the execution of this Act, and also by what person such offence was committed and also that it was committed without the knowledge, consent or connivance of the employer and in contravention of his orders, then the inspector shall proceed against the person whom he believes to be the actual offender in the first instance, without first proceeding against the employer. R.S.O. 1887, c. 208, s. 34.

43. Where an offence for which an employer is liable under this Act to a fine has in fact been committed by some agent, servant, workman or other person, such agent, servant, workman or other person shall be liable to the same fine, penalty or punishment for such offence as if he were the employer, R.S.O. 1887, c. 208, s. 35.

44. A person shall not be liable in respect of a repetition of the same kind of offence from day to day to any larger fine, penalty or punishment than the highest fine, penalty or punishments fixed by this Act for the offence, except—

1. Where the repetition of the offence occurs after an information has been laid for the previous offence; or,

2. Where the offence is one of employing two or more children, young girls or women, contrary to the provisions of this Act, R.S.O. 1887, c. 208, s. 36.

45. All fines or penalties in money imposed or recovered under or in pursuance of this Act, shall be paid by the convicting Justices or Police Magistrates, as the case may be, to the inspector, who shall forthwith pay the same over to the Treasurer of the Province to and for the use of the Province. R.S.O. 1887, c. 208, s. 37.

46. All prosecutions under this Act may be brought and heard before any two of Her Majesty's Justices of the Peace in and for the county where the penalty was incurred or the offence was committed or wrong done, and in cities and towns, in which there is a Police Magistrate, before such Police Magistrate; and save where otherwise provided by this Act the procedure shall be governed by The Ontario Summary Convictions Act. R.S.O. 1887, c 208, s. 39.

47. The following provision shall have effect with respect to summary proceedings for offences and fines under this Act:

1. The information shall be laid within two months, or where the offence is punishable at discretion by imprisonment, within three months after the offence has come to the knowledge of the inspector. 58 V. c. 50, s. 11.

2. The description of an offence in the words of this Act, or in similar words, shall be sufficient in law.

3. Any exception, exemption, proviso, excuse or qualification, whether it does or does not accompany the description of the offence in this Act, may be proved by the defendant but need not be specified or negatived in the information, if so specefied and negatived, no proof in relation to the matters so specified or negatived shall be required on the part of the informant.

4. It shall be sufficient to allege that a factory is a factory within the meaning of this Act, without more.

5. It shall be sufficient to state the name of the ostensible employer or the title of the firm by which the employer employing persons in the factory is usually known.

6. A conviction or order made in any matter arising under this Act, either originally or on appeal, shall not be quashed for want of form, and a conviction or order made by a Court of summary jurisdiction against which a person is authorized by this Act to appeal, shall not be removed by *certiorari* or otherwise, either at the instance of the Crown or of any private person, into the High Court except for the purpose of the hearing and determination of a special case, R.S.O. 1887, c. 208, s. 38 (2-6).

48. On the trial of any complaint, proceeding, matter or question under this Act, the person opposing or defending, or who is charged with any offence against or under any of the provisions of this Act, shall be competent and compellable to give evidence in or with respect to such complaint, proceeding, matter or question. 52 V. c. 43, s. 40.

49. Such annual or other report of the inspector as the Lieutenant-Governor from time to time directs, shall be laid before the Legislative Assembly. R.S.O. 1887, c. 208, s. 40.

50. Unless and until otherwise ordered or directed by any regulation in that behalf made by the Lieutenant-Governor in Council.

(*a*) The register mentioned in and required by section 33 of this Act shall, so far as the same relates to children and young girls, be according to form A in Schedule B in the said Schedule;

(*b*) The register mentioned in and required by section 12 of this Act shall be according to form C in said Schedule;

(*c*) On the first page of any register kept by an employer pursuant to this Act, or to any rule, order or regulation made in that behalf by the Lieutenant-Governor in Council, shall be printed the form D in the said Schedule, or one to the like effect; and the same shall be properly filled up and signed by the inspector and the employer, when such register is commenced to be kept.

(*d*) Notice of the hours between which children, young girls or women, are to be employed in any factory, as required by section 13 of this Act, shall be according to form E in said Schedule;

(*e*) Notice to an inspector, under sections 22 to 24 of this Act may be in the form of F of said Schedule.

(*f*) Notice to an inspection under section 26 of this Act may be according to such of the forms G and H of said Schedule as the case requires; and

(*g*) Notice to an inspector, under section 33 of this Act may be in the form I of the said Schedule. 52 V. c. 43, s. 14.

51. The owner proprietor or manager of any factory hereafter established and to which this Act applies, shall not begin operations until he shall have received from the Factories Inspector a certificate of inspection of the factory and a permit to operate the same and any such person violating the provisions of this section shall be liable to the penalties provided for in section 19 of this Act. 1 Edw. VII, c. 35, s. 4.

Amendment, 1905.

Where an Inspector appointed under the Ontario Factories' Act is called as a witness he shall be entitled, acting thereon by the direction and on behalf of the Attorney-General, or of a member of the Executive Council, to object to giving evidence as to any factory inspected by him in the course of his official duty.

Industries Included Under Factories Act.

Agricultural Implement Factories.
Apple Evaporator Factories.
Artificial Flower Factories.
Auger Factories,
Axle and Spring Factories.
Bakehouses and Bakeshops.
Baking Powder and Yeast Factories.
Barb Wire Factories.
Barrel Factories.
Basket Factories.
Bell Factories.
Billiard Table Factories.
Binder Twine Factories.
Bird Cage Factories.
Biscuit Factories.
Blacking Factories.
Blanket Factories.
Boat and Canoe Factories.
Boiler Factories.
Bolt and Nut Factories.
Book-binding Factories.
Boot and Shoe Factories.
Box Factories.
Brass Foundries.
Breweries.
Brick Yards.
Broom Factories.
Brush Factories.
Buffalo Robe Factories.
Bustle and Hoopskirt Factories.
Button Factories.
Canning Factories.
Cap Factories,
Carpet Factories.
Carriage Factories.
Carriage Goods (iron) Factories.
Carriage Woodwork Factories.
Cartridge Factories.
Car Shops.
Cement Works.
Chain Works.
Chamois Factories.
Cheese Box Factories.
Chemical Works.
Chewing Gum Factories.
Chicle Works.

Child's Carriage Factories.
Cider Factories.
Cigar Factories.
Cereal Food Factories.
Cigar Box Factories.
Clay Pipe Factories.
Clock Factories.
Clothing Factories.
Coal-hoisting Plants.
Coffin Factories.
Condensing Cream and Milk Factories.
Confectionery Factories.
Coopers' Workshops.
Cork Factories.
Corset Factories.
Corset and Hoopskirt. Steel Factories.
Cotton Factories.
Cutlery Factories.
Distilleries
Domestic Utensils Factories.
Dress Shield Factories.
Drop Forging Factories.
Dye Works.
Edge Tool Factories.
Electric Machinery Factories.
Electrotype Foundries
Elevator Factories.
Emery Wheel Factories.
Enamelling Works.
Envelope Factories.
Extracts and Essential Oil Factories.
Excelsior Factories.
Featherdown Factories.
Felt Factories.
File Works.
Fire Works Factories.
Flax Mills
Flour Mills.
Foundries.
Fringe and Tassel Factories.
Fruit Dessicating Factories.
Furniture Factories.
Furriers' Workshops.
Galvanized and Pressed Ironwork Factories.
Gas and Electric Light Works.
Glass Works.
Glove Factories.
Glucose Factories.
Gun and Small Arm Factories.
Hair Factories.
Hair Cloth Factories.
Hames Factories.
Hammer Factories.
Hat Factories.
Hinge Factories.
Horn Comb Factories.
Hobby Horse Factories.
Hosiery Factories.
Iron Bridge Works.
Jams, Jellies and Pickle Works.
Jewellery Factories.
Kaoka Factories.
Knitting Factories.
Knitting Machine Factories.
Knitting Needle Factories.
Lace Factories.
Lamp Goods Factories.
Last Factories.
Laundries.
Laundry. Bluing and Washing Crystal Factories.
Lead Pipe and Shot Factories.
Leather Goods Factories.
Linen, Cotton and Jute Bag Factories.
Lithographers' Workshops
Lock Factories.
Locomotive Works.
Machine Shops.
Machine Screw Works.
Mantel Piece Factories.
Marble Works.
Match Factories.
Matting Factories.
Mattress Factories.
Meat-packing Houses.
Metallic Shingle Factories.
Mica Works.
Mill Furnishing Factories.
Millinery Workshops.
Mirror Factories.
Moccasin Factories.
Nail Works.
Necktie Works.
Oil Mills.
Oil Refineries.
Oilcloth Factories.
Organ Factories.
Organ Reeds Factories.
Ornamental Moulding Factories.
Overgaiter Factories.
Paint Works.
Paper Bag Factories.
Paper Box Factories.
Paper Collar Factories.
Paper and Pulp Mills.
Pumping Stations.
Parafine Factories.
Patent Medicine Factories.
Photographic Supplies Factories.
Piano Factories.
Piano and Organ Keyboard Factories.
Picture Frame Works.
Pin Factories.
Planing Mills.
Plated Metal Works.
Polish Factories.
Plush Factories.
Potteries.
Printing Ink Factories.
Prining Offices.
Pulp Factories.
Pump Factories.
Quilting Factories.
Rag-sorting Workshops.
Rattan Goods Factories.
Reaper Knife Factories.
Regalia Factories.
Repair Shops.
Rivet Works.
Rolling Mills.
Rope Works.
Rubber Factories.
Sadlery Hardware Factories,
Safe Works.
Salt Drying Works.
Sash and Door Factories.
Saw Factories.
Saw Mills.
Scale Works.
Seed-sorting Works.

Sewer Pipe Factories.
Sewing Machine Works.
Shirt Factories.
Shoddy Factories.
Shovel Factories.
Show Case Factories.
Silk Factories.
Silk Ribbon Factories.
Silverware Factories.
Skate Works.
Soap Works.
Soda Water Factories.
Spice and Coffee Mills.
Spoke and Hub Factories.
Spool Factories.
Stained Glass Factories.
Starch Factories.
Stave Factories.
Stay Factories.
Steel Wire Factories.
Straw Works.
Sugar Refineries.
Suspender Factories.
Syrup Factories.
Tanneries.
Tent and Awning Factories.
Terra Cotta Works.
Thread Spooling Factories.
Tin Stamping Works.
Tobacco Factories.
Toy Factories.
Trunk Factories.
Tub and Pail Works.
Type Foundries.
Typewriter Factories.
Umbrella Works.
Varnish Works.
Velocipedes and Bicycle Factories.
Veneer Factories.
Vinegar Works.
Waggon and Sleigh Factories.
Wall Paper Factories.
Watch Case Factories.
Wax Paper Factories.
Wheel Factories.
Whip Factories.
Wholesale Packing Houses.
Window Shade Factories.
Wire Goods Factories.
Woodenware Factories.
Wood Pulley Factories.
Wood Screw Factories.
Woollen Factories.
51. V. c. 43, Schedule A ; 58 V. c. 50, s. 13.

Regulation of Shops. R.S.O. 1897, Cap. 257

An Act Respecting Shops and Places Other than Factories.

No child, young girl or woman shall be employed in or about the shop on any day of the week, other than Saturday or the day next before a statutory holiday, before the hour of seven o'clock in the morning, or after the hour of six o'clock in the evening.

Saturday labor shall not commence before the hour of seven o'clock in the morning nor continue after the hour of ten o'clock in the evening.

There shall be allowed for each child, etc., so employed not less than one hour for the noonday meal, and not less than forty-five minutes for the evening meal.

If any child, young girl or woman is employed in a shop on the day next a statutory holiday until ten o'clock in the evening, in that case such child, etc., shall not be employed after six o'clock in the evening on Saturday of the same, week.

Nothing in this section contained shall apply or be in force as to any shop, from the 14th day of December to the 24th day of December inclusive, in each year.

In any shop where females are employed the employer shall at all times provide and keep therein a suitable seat or chair for the use of every such female and shall permit her to use such chair when not necessarily engaged in her work.

Any person offending against the provisions of this Act shall be liable to a fine of not less than $10.00, nor more than $25.00, with the cost of prosecution, and in default of immediate payment of such fines and costs, to be imprisoned in the common gaol of the county for not less than one month or more than three months.

The provisions of this Act relating to the sanitary conditions of shops, and the means of extinguishing fire, etc., are practically the same as the provisions of the Factories Act in this respect.

The inspector shall have the right to exercise such powers as may be necessary for carrying this Act into effect.

Bake Shops.

All bake shops to which this Act applies shall be constructed as to lighting, heating, ventilating and draining in such a manner as not to be injurious to the health of any person working therein, and shall be kept at all times in a clean and sanitary condition, so as to secure the production and preservation of all food products therein in a good and wholesome condition.

Every bake shop shall be supplied with a proper washroom, closet and other conveniences necessary for the health and comfort of the persons employed therein.

The sleeping places of the employees shall be entirely separate from the bake shop and no person shall be allowed to sleep in such shop.

No employer shall allow or require any employee to be in any bake shop to work on Sunday, nor to work more than twelve hours on any day, or more than sixty hours in any one week, except by permission of inspector.

No employer shall knowingly require or permit any person to work in his bake shop who is affected with consumption of the lungs or with scrofula, or with any venereal disease, and every employer is hereby required to maintain himself and his employees in a clean and healthy condition, while engaged in the manufacture, handling or sale of such food products.

Any employer who violates any of the provisions of this Act which relates to bake shops shall for the first offence pay a penalty of not less than $20.00, besides costs thereof, and not more than $50.00; and for the second offence shall pay a penalty of not less than $50.00, besides costs, and not more than $100.00 and in default of payment shall be imprisoned in the common gaol of the county in which the offence is committed for a period not less than thirty days, or more than six months, and be kept at hard labor at the discretion of the magistrate, and for the third and subsequent offences shall be imprisoned in goal for a period not less than six months nor more than one year, to be kept at hard labor at the discretion of the magistrate.

AN ACT TO AMEND THE ONTARIO SHOPS REGULATION ACT.

S.O., 1900, Cap. 43, provides that every person contracting for the manufacture of coats, vests, trousers, overalls, cloaks, cap, drawers, blouses, waists, waist bands, underwear, neckwear shirts, or any parts thereof, or any other garment or article of clothing, or giving out for improvement, manufacture or alteration, incomplete material from which the said articles or any of them are to be made, or to be wholly, or partially altered or improved, shall keep a written register of the names and addresses, serially numbered, of all the persons to whom such work or material is given to be made, altered or improved, or with whom he may have contracted to do the same; and such register shall at all times be kept prominently posted up in the office of the person thus giving out such articles for manufacture, alteration or improvement.

Every article thus made, altered or improved, as aforesaid, shall bear upon a label attached thereto the register number or the name and address of the person to whom the same was given for manufacture, alteration or improvement, and any false statement upon such label shall render the person making the same liable to the penalties provided by this Act for making false entry in any register, notice, certificate or document.

No person shall knowingly sell or expose for sale any of the articles mentioned in this section and made in any dwelling house, tenement house or building in the rear of any tenement, etc., without a permit from the inspector, stating that the place of manufacture is thoroughly clean, and otherwise in

good sanitary condition. Such permit shall state the maximum number of persons allowed to be employed upon the said premises, and shall not be granted until an inspection of the premises is made by the inspector.

When any article mentioned under this section is found by the Inspector to be made under unclean or unhealthy conditions, or upon any unregistered premises, he shall seize and impound the same, and affix thereto a label bearing the words "unsanitary" printed on a tag not less than four inches in length.

The owner of such articles shall, after it has been disinfected, be entitled to have the same returned to him, upon first paying the costs of such seizure and disinfection.

If the inspector finds evidence of unhealthy conditions, or of infections or contagious disease present in any workshop, tenement or dwelling, where any of the articles herein mentioned are manufactured, etc., he shall forthwith report the same to the local Board of Health, and the Board shall issue such an order as the public health may require, or may condemn or destroy all such infectious and contagious articles or any articles manufactured under unsanitary conditions, as aforesaid.

Immigration of Children.

R. S. O. 1897, Cap. 262, provides that no child shall be brought or caused to be brought into the Province of Ontario by any Society or agent or by any person other than the parent of the child, or person standing in *loco parentis* to such child, from any port in Great Brition or Ireland unless a certificate has first been obtained from an examiner stating that he has satisfied himself that the child named in the certificate has not been convicted of any crime, nor displayed any criminal tendencies, and that in other respect he is a child who may lawfully be brought into the Province.

Every society or agent shall maintain a careful supervision over every child caused by them to be brought into the Province, until such a child attains the age of eighteen years, and shall provide a permanent home or shelter, to which such child may be returned after being placed out in a foster home, or as an apprentice, if the person with whom the child has been placed is unable or unwilling to retain the custody of the child ; and the address of such shelter shall be specified in every aggreement made with persons receiving children into foster homes or as apprentices, and every such person shall, when so required by the society or agent, furnish full particulars as to the health, conduct, progress and welfare of such child.

Any complaints received that a child placed out in a foster home, or as an apprentice is being ill-treated or overworked, etc., shall be immediately investigated by the society or agent, and the necessary steps taken to protect the child from future ill-treatment or neglect.

Every society or agent having the custody of any child brought into the Province shall be entitled to send such child to the public or separate schools of the municipality in which the child resides, in the same manner as the child of any ratepayer.

If any child hereafter so brought into the Province of Ontario, within three years thereafter, becomes dependent on public or private charity, the society or agent, if so ordered by the inspector, shall pay to the Province or to any person maintaining the child, the cost of maintenance of the child, and may be required to return the child to the place from which he came into this Province.

Any society or agent who brings into the Province any child, who from defective intellect or disease or physical infirmity, or any other defect, is unable to follow any trade or calling, or any child of known vicious tendencies, or any child who is known to be an habitual criminal, or whose parents have been criminals, lunatics or idiots or weak minded or defective constitutionally, or confirmed paupers or diseased, shall be liable to a penalty of not more than $100 or less than $10, and in default of payment shall be imprisoned for any period not exceeding three months.

Horse Power for Threshing Machines.

R.S.O. 1897, Cap. 265, provides that all persons owing or running any threshing machine, wood-sawing or other machine, which is connected to a horse-power by means of a tumbling rod or line of shafting shall cause each of the knuckles, couplings and joints, etc., of such tumbling rod or line of shafting to be safely boxed or secured while running, with wood or leather or metal coverings, in such manner as to prevent injury to persons passing over or near such tumbling rod, etc., and shall cause all oiling cups attached to arbors or journals to which driving belts are attached, to be furnished with tubes of tin or other material, which shall extend above the belts so as to prevent damage from oiling when the machine is in motion; and shall further cause a driver's platform to be placed on any horse-power used for driving machinery, of such size as to cover the gearing and to prevent accident to any person from contact with said gearing.

Any person who refuses to comply with the provisions of this Act shall be liable to a fine of not less than $1 nor more than $20, over and above the costs of prosecution, and in default of payment shall be imprisoned in the nearest common gaol for a period of not less than two or more than twenty days.

Technical Schools.

R.S.O. 1897, Cap. 301, provides that the trustees of any high school or board of education may, by resolution passed at a special meeting, called for the purpose, establish a techincal school, or may change any high school already established into a technical school, providing that such resolution shall not take effect until ratified by by-law of each municipality composing the high school district, and also by the county council (if any) required by the High School Act to contribute the equivalent of the legislative grant towards the maintenance of such high school.

The provisions of the High School Act shall apply to technical schools, subject to any regulations of the Education Department, with respect to fees, etc.

Technical Schools for Adults.

It shall be lawful for the municipal corporations of any city or town to appropiate such sums of moneys as may be deemed expedient for the establishment of a technical school for adults within the meaning of this Act.

The general management of the schools for adults shall be vested in and exercised by a board of management, to be appointed as provided in section 9 of the Public Libraries Act. In cities and towns where there is a Public Library technical schools for adults shall be under the control of the board of such library.

Employment of Prisoners.

R.S.O. 1897, Cap. 216, provides that the Lieutenant-Governor in Council may from time to time direct the employment upon any work or duty, the nature of which is to be specified, beyond the limits of any common gaol, of any prisoner who is sentenced to hard labor under the authority of any statute of Ontario, or for breach of the by-laws of any municipal corporation in this Province. Every prisoner shall during such employment be subject to the rules and regulations of the gaol so far as applicable. No prisoner shall be so employed, save under the strictest care and supervision of officers appointed to that duty.

An account shall be kept of the amount earned by the labor of prisoners, and shall be divided between the Province and the county in proportion to the amount contributed by them respectively towards the maintenance of such prisoners.

ON APRIL 4th, 1900, THE FOLLOWING RESOLUTION WAS PASSED BY THE LEGISLATURE OF ONTARIO.

Resolved, that in the opinion of this House all Government contracts shall contain such conditions as will prevent abuses which may arise from the subletting of such contracts, and that every effort should be made to secure the payment of such wages as are generally accepted as current in each trade for competent workmen in the district where the work is carried out, and that this House cordially concurs in such policy, and deems it the duty of the Government to take immediate steps to give effect thereto; and it is hereby resolved that the work to which the foregoing policy shall apply includes not only work undertaken by the Government itself, but also all works aided by a grant of provincial public funds, and that the aforesaid policy shall be forthwith applied to every department of the public service, and to all parties now performing services for the Government. That this house is further of the opinion that in all appropriate cases the legislation of this House should be in harmony with this resolution.

S.O. 1900, Cap. 14. An Act Respecting the Bureau of Labor.

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

1. There shall be attached to the Department of the Commissioner of Public Works a bureau, to be styled "The Bureau of Labor."

2. The Lieutenant-Governor may appoint a Secretary of the said Bureau and may also appoint such other officers as may be necessary for the proper conduct of the Bureau.

3. It shall be the object of the Bureau to collect, assort and systematize and publish information and statistics relating to employment, wages and hours of labor throughout the Province—co operation, strikes, or other labor difficulties, trades, unions, labor organizations, the relations between capital and labor, and other subjects of interest to workingmen, with such information relating to the commercial, industrial and sanitary condition of workingmen, and the permanent prosperity of the industries of the Province, as the Bureau may be able to gather.

AN ACT RESPECTING AID TO CERTAIN RAILWAYS, S.O. 1901, CAP. 22.

Contains clauses for the protection of workmen engaged thereon, as follows:

8. The workmen, laborers or servants employed on or about the construction of the said railway, each of them shall be charged fair and reasonable prices for any board, provisions, clothing and other necessaries of life and reasonable comfort, supplied by the company, their agents or any person or persons authorized by the company to supply such goods and accommodation, and upon the breach of any of the provisions of this section or in the event of exorbitant charges being made by the railway company, their agents, or other person or persons authorized by the railway company, there may be deducted and retained from moneys payable in respect of such unearned subsidy, or hereafter to be granted subsidy, such amount as the Lieutenant-Governor in Council may think proper.

12. The Lieutenant-Governor in Council may instruct the Secretary of the Provincial Board of Health to enforce such reasonable sanitary regulations on the works and in the camps connected therewith during the construction of the said railways, as may be deemed necessary to maintain proper sanitary conditions and accommodation, and contractors shall have at such camps a tent and store, where in case of emergency a patient suffering from a contagious disease may be isolated at once, so as not to endanger the men in the camp.

18. All the provisions of the "Act to secure payment of wages for labor performed in the construction of public works," of the "Act respecting subsidies to railways and to encourage the manufacture of railway steel and iron in the Province," and of "The Ontario Railway Act," shall apply to the subsidies granted by this Act, and the wages paid on any of the said works shall be such as are generally accepted as current for competent workmen in the respective districts where such railways are to be constructed.

AN ACT RESPECTING SANITARY REGULATIONS IN UNORGANIZED TERRITORIES

S.O. 1901, Cap 34, provides that the Lieutenant-Governor may from time to time make regulations applicable only to those parts of the Province which are without municipal organization.

(1) Respecting any particular industry, and the conditions under which the same may be carried on, for the purpose of preventing nuisances and the outbreak or spread of disease.

(2) For the cleansing, regulating and inspection of lumbering camps, mining camps, and railway construction, and other places where labor is employed.

(3) For providing for the inspection of houses and premises.

(4) For providing for the employment of duly qualified medical practitioners by employers of labor in lumber and mining camps and railway construction and other works where labor is employed, and for the erection of permanent or temporary hospitals for the accommodation of persons so employed

S.O. 1901, CAP. 36. AN ACT TO AMEND THE ONTARIO SHOPS REGULATION ACT.

1. Section 13 of the Ontario Shops Regulation Act is amended by adding thereto the following sub-sections:

(3) The owner of every shop shall be held responsible for the providing of the sanitary conveniences provided under sub-section (2) of this section, and on

failure or refusal to provide the same within two months after receiving written notice from the inspector, shall be liable on conviction to a fine of not more than $500; or in default of payment of the same, shall be imprisoned for a period of not more than twelve months.

(4) Where grinding, polishing or buffing is carried on in any shop, the provisions of section 16 of the Ontario Factories Act shall apply to such shop.

2. Section 39 of the Ontario Shops Regulation Act is repealed and the following substituted therefor:

39. No person shall require, permit or suffer any employee in any bake shop to work on Sunday, nor for more than twelve hours out of every twenty-four hours, computed from the time when the employer commences to work, nor more than sixty hours in any one week, to be computed as commencing on Monday and ending on Saturday, both days inclusive, except by permission of the inspector given in writing to the employer; and a copy of such permission shall be posted in a conspicuous place in the bake shop.

Barber Shops.

3. The said Act is further amended by adding thereto the following as sections 45 and 46:

45. No employer shall require, permit or suffer any employee in any barber shop to work on Sunday, and no proprietor of any barber shop shall open his barber shop or permit the same to be opened to the public or carry on any business or work therein at any time between the hours of 12 o'clock on Saturday night and 12 o'clock on Sunday night.

46. Any employer or any proprietor of a barber shop who violates the provisions of the previous section shall on conviction thereof be liable to a penalty of not less than $20, besides costs, and not more than $50, besides costs, and in default of payment of the same, shall be imprisoned for a period of not less than thirty days and of not more than six months.

CITIES IN ONTARIO.

Names of Mayors from Date of Incorporation to the Year 1907.

Belleville, incorporated 1878.

Alexander Robertson 1878-9
R. S. Patterson 1880-1
Nelson Lingham 1882-3
Jas. W. Dunnett 1884-5
H. McIninch 1886
W. H. Biggar 1887
Dr. B. S. Wilson 1888
W. J. Diamond 1889
George S. Tickell 1890
E. Guss Porter 1891
C. Bogart 1892
F. S. Wallbridge 1893
J. E. Walmsley 1894-5-6
J. W. Johnson 1897-8-9-0
R. J. Graham 1901-2-3
W. W. Chown 1904
Chas. N. Sulman 1905-6-7

Brantford, incorporated 1877.

James W. Digby, M.D. 1877
Robert Henry 1878-9
Reginald Henwood, M.D. 1880-1
William Watt 1882-3
W. J. Scarfe 1884-5
C. B. Heyd 1886
Robert Henry 1887
C. B. Heyd 1888-9
S. G. Read 1890-1
Levi Secord, M.D. 1892-3
George Watt 1894-5
Thomas Elliott 1896-7
W. G. Reymond 1898-9
H. Cockshutt ..... 1899-'0
D. B. Wood 1901-2
M. K. Halloran 1903-4
C. H. Waterous 1905-6
J. W. Bolby, K.C. 1907

Chatham, incorporated 1895.

Manson Campbell 1895-6
Henry Smyth 1897
H. A. Patterson 1898
T. A. Smith 1899-0
G. W. Sulman 1901-2
W. E. McKeough 1903-4

Names of Mayors.—*Continued.*

Chatham.—*Concluded.*

George W. Cowan 1905
W. S. Marshall 1906
Wm. Stone 1907

Guelph, incorporated 1879.

George Howard 1879
George Sleeman 1880-1-2
Caleb Chase 1883-4
Wm. Stevenson 1885-6
A. H. Macdonald 1887-8
Thomas Gowdy 1889-90
Thomas Goldie 1891
Thomas Goldie.. } 1892
George Sleeman. }
W. G. Smith 1893-4
John A. Lamprey 1895-6
James Hewer 1897-8
R. E. Nelson 1899-0
John Kennedy 1901-2
John H. Hamilton 1903-4
George Sleeman 1905-6
John Menstead 1907

Hamilton, incorporated 1847.

Colin C. Ferrie 1847
Geo. C. Tiffany 1848
W. L. Diston 1849
John Fisher 1850
John R. Holden 1851
Nehemiah Ford 1852
W. G. Kerr 1853
James Cummings, 3 months.....1854
Chas. Magill, 9 months.....1854-5
James Cummings 1856
John F. Moore 1857
Geo. H. Mills 1858
Henry McKinstry 1859-60-1
Robt. McIlroy 1862-3-4
Chas. Magill 1865-6
Benjamin E. Charlton 1867
Hutchinson Clark 1868
Jas. E. O'Reilly 1869
George Murison 1870
D. B. Chisholm 1871-2
Benjamin E. Charlton 1873-4
George E. Roach 1875-6
F. E. Kilvert 1877-8
Jas. E. O'Reilly 1879-80-1
Chas. Magill 1882-3
J. J. Mason 1884-5
Alex. McKay 1886-7
Wm. Doran 1888-9
David McLellan 1890-1
Peter C. Blaicher 1892-3
A. D. Stewart 1894-5
Geo. E. Tuckett 1896
Ed. A. Colquhoun 1897-8
J. V. Teetzel 1899-0
John S. Hendrie 1901-2
W. J. Morden 1903-4
S. D. Biggar 1905-6
Alex. Stewart 1907

Kingston, incorporated 1846.

John Counter 1846
Thomas Kirkpatrick 1847
William Fore, Jr 1848
Francis Manning Hill 1849
John Counter 1850
Francis Manning Hill 1851
John Counter 1852-3
John Flannigan 1854
John Counter 1855
O. S. Gildersleeve 1856
George Davidson 1857
John Flannigan 1858
O. S. Strange 1859-0
O. S. Gildersleeve 1861-2
John Creighton 1863-4-5
John Breden 1866-7-8
William Robinson 1869-0
Arch. Livingston 1871
S. T. Drennan 1872
H. Cunningham 1873
Michael Sullivan 1874-5
Byron M. Britton 1876
John McKelvey 1877
John McIntyre 1878
C. F. Gildersleeve 1879
Robert J. Carson 1880
E. J. B. Pense 1881
John Gaskin 1882
Chas. Livingston 1883
Jas. McCammon 1884
Edw. H. Smythe 1885
John L. Whiting 1886
John Carson 1887
Jas. D. Thompson 1888-9
W. M. Drennan 1890-1
D. M. McIntyre 1892
N. C. Polson 1893
John Herald, M.D 1894
Clark W. Wright 1895
Robert F. Elliott 1896
J. S. Skinner 1897
C. Livingston 1898
E. Ryan, M.D 1899
J. A. Minnes 1900
R. E. Kent 1901
J. M. Shaw 1902
J. H. Bell 1903-4
R. N. F. McFarlane 1905
J. McDonald Mowat 1906-7

London, incorporated 1855.

Murray Anderson 1855
William Barker 1856
Elijah Leonard 1857
David Glass 1858
William McBride 1859
James Moffat 1860
F. E. Cornish 1861-2-3-4
David Glass 1865-6
Frank Smith 1867
Wm. S. Smith 1868
John Christie 1869
S. H. Graydon .....
S. H. Graydon 1870
J. M. Cousins 1871
John Campbell 1872
A. McCormick 1873
Benjamin Cronyn 1874-5
D. C. McDonald 1876
Robert Pritchard 1877
Robert Lewis 1878-9
John Campbell 1880-1
E. Meredith 1882-3
C. S. Hyman 1884
Henry Beecher 1885
T. D. Hodgins 1886

Names of Mayors.—*Continued.*

London.—*Concluded.*

James Cowan 1887-8
George Taylor 1889-90-1
W. M. Spencer 1892
E. T. Essery 1893-4
John W. Little 1895-6-7
John D. Wilson, M.D. 1898-9
Frederick G. Rumball 1900-1
Adam Beck 1902-3-4
Cl. T. Campbell, M.D. 1905
J. C. Judd 1906-7

Niagara Falls, incorporated 1903.

George Haman 1903-4
William Phemister 1905
Robert P. Slater 1906-7

Ottawa, incorporated 1854.

J. B. Lewis 1855-6-7
Edward McGillivray 1858-9
Alexander Workman 1860-1-2
Henry J. Friel 1863
M. K. Dickinson 1864-5-6
Robt. Lyon 1867
Henry J. Friel 1868-9
John Rochester 1870-1
E. Martineau 1872-3
J. P. Featherston 1874-5
G. B. L. Fellows 1876
W. H. Waller 1877
C. W. Bangs 1878
C. H. Mackintosh 1879-80-1
P. St. Jean 1882-3
C. T. Bate 1884
Francis McDougal 1885-6
McLeod Stewart 1887-8
Jacob Erratt 1889-90
Thos. Birkett 1891
Olivier Durocher 1892-3
George Cox 1894
Wm. Borthwick 1895-6
Samuel Bingham 1897-8
Thos. Payment ..... 1899-'0
W. D. Morris .. } 1901
Jas. Davidson .. }
Fred Cook 1902-3
J. A. Ellis 1904-5-6
Scott 1907

Peterborough, incorporated 1905.

Henry Best 1905-6
R. F. McWilliams 1907

Stratford, incorporated 1885.

William Gordon 1885
Chas. J. McGregor 1886-7
Henry S. Butler 1888-9
John Brown 1890-1
Elijah Hodgins 1892
John C. Monteith 1893-4
Wm. Davidson 1895-6
John O'Donoghue 1897-8
James Hodd ..... 1899-'0
James Stamp 1901-2
William Hepburn 1903-4
W. J. Furguson 1905-6
Wm. Gordon 1907

St. Thomas, incorporated 1881.

W. C. VanBuskirk 1881-2
E. W. Custin 1883
E. Horton 1884-5
J. E. Smith 1886
John Midgely 1887-8
Israel Morse 1889-90
Robert McCully 1891-2
George L. Oill 1893-4
W. E. Idsardi 1895-6
F. W. Wright 1897-8
P. Meehan ..... 1899-'0
S. Chant 1901-2
C. F. Maxwell 1903-4
Thomas Meek 1905
Calvin Lawrence 1906-7

St. Catharines, incorporated 1876

Calvin Brown 1876
Luceus S. Oille 1878
Henry Carlisle 1879
Patrick Larkin 1882
R. H. Smith 1884
Henry A. King 1885
John E. Cuffe 1887
John B. McIntyre 1889
Edwin Goodman 1891
Donald Robertson 1893
John C. Rykest 1895
Wm. B. Gilleland 1897
M. Y. Keating 1899
John B. McIntyre 1901
Wm. B. Burgoyne 1903
A. W. Marquis 1904
Theo. Sweet 1905
Andrew Riddell 1906

Toronto, incorporated 1834.

William Lyon Mackenzie 1834
Robt. Baldwin Sullivan 1835
Thos. D. Morrison 1836
George Gurnett 1837
John Powell ..... 1838-9-'0
George Monro 1841
Hon. Henry Sherwood, Q.C. 1842-3-4
Wm. H. Boulton 1845-6-7
George Gurnett ..... 1848-9-'0
John G. Bowes 1851-2-3
J. G. Beard ..... } 1854
J. B. Robinson .. }
G. W. Allan 1855
J. B. Robinson 1856
John Hutchinson 1857
W. H. Boulton ..... } 1858
D. B. Read, Q.C. ..... }
Adam Wilson, Q.C. 1859
Adam Wilson, Q.C. .. } 1860
John Carr, Pres. ..... }
J. G. Bowes 1861-2-3
F. H. Medcalf 1864-5-6
James E. Smith 1867-8
S. B. Harmen 1869
S. B. Harmen ..... } 1870
G. D'Arcy Boulton, Pres. .. }
Joseph Sheard 1871-2
Alexander Manning 1873
F. H. Medcalf ..... } 1875
John Baxter, Pres .. }

NAMES OF MAYORS.—*Concluded.*

TORONTO.—*Continued.*

Angus Morrison, Q. C.....1876
Angus Morrison, Q.C. } 1877
P. G. Close, Pres. . . . }
Angus Morrison, Q.C.....1878
James Beaty, Jr., Q.C.....1879-80
W. B. McMurrich 1881-2
A. R. Boswell 1883-4
Alexander Manning 1885
W. H. Howland 1886-7
E. F. Clarke 1888
E. F. Clarke 1889
John McMillan, Pres. . }
E. F. Clarke 1890-1
R. J. Fleming 1892-3
Warring Kennedy 1894-5
R. J. Fleming.....1896
R. J. Fleming.... } 1897
John Shaw..... }
John Shaw 1898-9
E. A. Macdonald 1900
O. A. Howland 1901-2
Thos. Urquhart 1903-4-5
Emerson Coatsworth 1906-7

WINDSOR, INCORPORATED 1892.

O. E. Fleming 1892-3
J. H. Beattie 1894
D. Willis Mason 1895-6
John Davis 1897-8-9-0-1
J. F. Smythe 1902
J. W. Drake 1903-4-5
Earnest S. Wigle 1906-7

WOODSTOCK, INCORPORATED 1901.

John Mearns 1901-2
John White 1903-4
James S. Scarff 1905
John Butler 1906-7

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